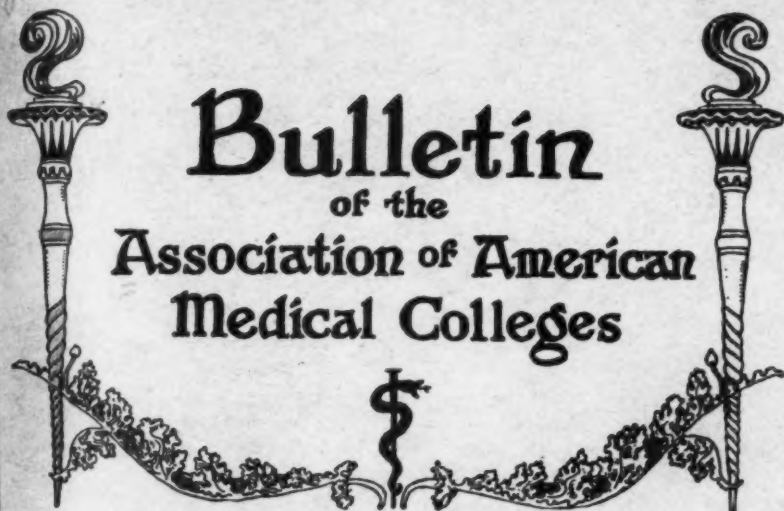


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## AN EXPERIMENT WITH THE PRECEPTOR SYSTEM\*

WILLIAM J. KERR

University of California Medical School, San Francisco

The modern medical school must serve a triple function. Research must be encouraged; undergraduate students must be prepared to take their places in the community as public servants; and graduates in medicine must be kept abreast of the advances in their fields by frequent association with a medical center.

In different institutions the emphasis placed upon one or another of these functions may vary. Schools with independent endowments have more latitude in the development of research. State institutions, depending largely upon public support through legislative action, are more circumscribed in their activities. They must primarily prepare the undergraduate for service to the State, and must offer facilities in graduate instruction. It is well recognized that only a small percentage of students are mentally and temperamentally equipped to carry on fundamental research. The vast majority, however, although they may profit by a knowledge of research methods, must be prepared to apply the rapidly accumulating knowledge of scientific medicine.

The standardization of medical education resulting in the elimination of the proprietary schools in this country has been of incalculable value. It has been said, justly or unjustly, that the pendulum has swung too far, resulting in stereotyped methods of instruction and loss of individuality in the schools and their graduates. Recent efforts to overcome the possible defects of the system have led to some relaxation of the prescribed regulations. Schools may now develop along lines compatible with local conditions. Certain schools may become institutes of medicine, attracting those who may be better qualified as investigators or teachers. Others may be better able to train students for general practice while many schools will no doubt offer opportunities for the development of the highest types of workers in many different fields.

For years there has been criticism of schools of medicine in their apparent failure to teach therapeutics and the art of medicine. This situation is partly due to the spirit of therapeutic nihilism, existing in some centers, which denies the value of any procedure which can-

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\*Read at the Thirty-seventh Annual Meeting held in Cleveland, Oct. 25-26, 1926.

not be proven upon the experimental animal. Some show an unusual aptitude in handling patients early in the course while others never acquire such ability irrespective of training and knowledge. It is well recognized, however, that practical therapeutics and the art of medicine can be developed by personal contact with the sick and may be conveyed to the student to some extent by wise and sympathetic teachers.

The criticism that recent graduates, in general, have too much theory and too little art is frequently made today. It would be more to the point to say that the students are getting about enough theory but to acquire too little knowledge of its application.

It was with a view to the stimulation of a greater interest in the application of medical knowledge that we have been experimenting with the preceptor system of education at the University of California Medical School. The preceptor system in vogue in this country a century or more ago had some admitted advantages, although the reverse of the much-theory-little-practice rule of today was evident.

Our prescribed curriculum at the University of California Medical School is completed in three and one-half years. The remaining four months of the fourth year are devoted to elective courses, two months of which must be taken in a major department. For the past two years a few selected students have been permitted to spend a month with an alumnus in general practice. The alumni have been chosen with great care, with due regard to ethics, general ability, and standing in the community. The student journeys to the appointed place and apprentices himself to the doctor, taking part in his daily activities and observing the methods of conducting practice in its various phases.

The complicated life of the busy general practitioner, unfolded to the student, need not be detailed here. It may suffice to say that, perhaps for the first time, the student may learn what the practice of medicine really means. Many students have only a vague conception of what lies ahead in their chosen field. Opinions may be formed and decisions may be based upon this experience.

A brief summary of our observations may be of interest.

1. During the first year only four students took part in the experiment; there were eight students so apprenticed for the second year; and applications for the third year indicate that a much larger number desire to spend a month in this manner.
2. The student's reports of their experiences show an unusual interest and enthusiasm. The variety of cases, the thoroughness in

the study and treatment of the conditions observed indicate that the alumni selected are giving the highest type of service to the public.

3. The alumni who have taken part in the experiment are as enthusiastic as are the students. They are glad to have the student come with the recent views on diagnosis and treatment and in return offer him practical therapeutics and the art of medicine.

4. Students who have had the month in general practice have shown greater interest and zest in the work of their prescribed intern year. They have been more sympathetic towards patients; they have shown a greater desire to be fully equipped with the methods of thorough study before leaving the institution for practice. Many have expressed the desire for at least a brief period in general practice before taking up a specialty. It is too early to know whether this brief experience in general practice will attract some to the smaller communities who would otherwise have remained in the larger centers. The impression gained is that such will be the case.

5. Alumni have shown renewed interest in the School through their cooperation in carrying out this plan. Their advice has been helpful. If the experiment fulfills our expectations, it may be wise to limit the alumni preceptors to a number just sufficient to meet the needs of the senior class. It may also be advisable to permit the entire class to have a month in general practice.

6. The criticism has been raised that the present curriculum offers too little time for a proper consideration of the ever-increasing knowledge of scientific medicine. The elimination of specialties from the curriculum would provide time for a broader fundamental training in both theory and practice. It may prove advantageous to require practical experience under a preceptor during the summer months between the third and fourth years or as a part of the intern service. There would be some difficulty in arranging the intern year to include this feature of the training, as many hospitals are not under university supervision, even when the intern year is required. After the intern year many graduates go into general practice for a time but there is no obligation for them to do so after the requirements of the school have been met.

It is obvious that there are advantages in the preceptor system, if carried on to a limited extent, under university supervision. Each school must meet the demand to develop sound and self-reliant clinicians in its own way but certain schools, notably those supported by the State, cannot fail in their duty if the bulwark of the profession, exemplified by the general practitioner, is to be preserved.

## STUDYING MEDICINE IN SWEDEN — A COMPARISON WITH OUR AMERICAN SYSTEM

HILDING BERGLUND

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In the many discussions of today on the subject of medical education, there is almost unanimous agreement on one point: the four years medical course must not be increased. It is doubtful, however, whether such a statement expresses what most people interested in the matter really mean. There is reason to believe that what is meant is that the age at graduation must not be raised. With only slight variations, this age at the present time is just about the same in different countries, surprisingly independent of the estimated length of their respective medical studies.

Another way of expressing the problem on medical education would, therefore, be: which is the best way of filling these years of preparation for the duties of a physician up to about the age reached by most of our present graduates, the age of 25 or rather 26. It is becoming more and more clear that it is the use of the years before the entering of the medical school that have to be looked into especially and that these years are the years in which saving of time must be accomplished. This point was hinted at by Flexner in his latest survey of medical education. The point is being particularly emphasized in a practical way by the experiments with a shorter college course just about to be started at the University of Wisconsin by President Frank and Dr. Meicklejohn, and it seems to me that partly the same line of thought was also in the mind of President Wilbur at his recent address in Chicago before the Council on Medical Education and Hospitals of the American Medical Association.

These remarks being at least temporarily accepted, it seems not too daring to assume that a comparison might be of interest between the American plan of studies and the studies in a country known for its exceedingly long medical course—Sweden—with a schedule of medical studies covering seven and a half years in medical school.

Graduating from the gymnasium at an average age of 18, the student immediately enters the medical school with a three years schedule for theoretical subjects, including general pathology. After properly passing examinations in the different subjects, he becomes "candidate of medicine," celebrates with his friends the result so far obtained, and then enters into four and one-half years of work in the practical subjects, including special pathology, forensic medicine and medical jurisprudence. With all examinations passed, he

might then be ready for his final degree and his state license to practice medicine at the age of about 26. One of my classmates, however, graduated with high marks in most subjects just after his twenty-fourth birthday.

Three distinct questions arise from a consideration of this outline. First: with what kind of previous training does a Swedish boy of 18 enter the medical school? The answer to this question is believed to be of special interest, viewed against the introductory remarks. Second: what is the general principle or principles followed, which lead to such a long schedule? Third: what is the amount of practical work offered during the latter half of the course?

It might be wise to consider the second question first. The rules for the medical studies, approved by H. M. Government in 1907, state that the courses shall be so arranged that the studies can be finished in the shortest possible time but *without jeopardizing the thoroughness of the work*. This point is further emphasized by the definite statement that in the grading of the work attention shall be given to the thoroughness of the knowledge, the degree of maturity and the ability of independent judgment rather than to the comprehensiveness of the courses taken. As a further direction for the arrangement of the studies, the rules prescribe that the work shall be so arranged that the book studies of a subject can be carried on parallel with the practical training in the same subject. As far as possible, the work shall also be arranged in such a way that the students are not induced to the simultaneous studying of non-related subjects.

This latter point is believed to be of special importance. As a matter of fact, it is only on two occasions that a deviation from this rule is deliberately made. One occasion is during the first half year of the studies when comparative anatomy and chemistry are taken simultaneously. The other occasion is during the "short courses" in clinical neurology, psychiatry, syphilology, ophthalmology and hygiene. Each one of these subjects is represented in the schedule by a two months course, but, subject to certain regulations, as many as three of these courses can be taken at one time.

As to the amount of practical work included in the studies, a survey of the course in internal medicine might be illustrative. There are required in Stockholm twelve months of courses in medicine, clinical neurology and psychiatry not included. The work is started by two simultaneous courses, one in physical diagnosis and one in clinical chemistry and microscopy (introductory course) covering two months. These are followed by a course lasting one month,

called diagnosis and therapy of pulmonary tuberculosis devoted to further drill in physical diagnosis. In order to make individual instruction a reality, these courses are conducted in two parallel sections, not more than fifteen students being allowed in each section. These courses are offered three times a year, the number of students to be taken care of thus being limited to ninety students a year.

These courses are immediately followed by six consecutive months on one of the two medical services of the chief teaching hospital. This work corresponds to the American clerkship. A maximum of thirty students can be taken care of at one time. Besides the daily work in wards and laboratory on the assigned cases, the student attends three medical clinics a week in the house and three in the dispensary. He also attends the autopsies on the cases from the hospital service, and if possible, in addition takes in a more advanced course in clinical chemistry and serology. During these six months, he participates in a fifteen hours course in roentgen-ray diagnosis. On the top of these compulsory lectures in roentgenology, a two months elective course in roentgen-ray technic and diagnosis is also offered.

Here, usually a break in his studies of internal medicine follows; surgery and the majority of other courses are taken and some examinations usually are passed. Eventually, the student returns to medicine, one month to be spent as assistant in the hospital for contagious diseases, and two more months as assistant in medicine, preferably on the service where he has had his six months medicine. Now he has greater responsibilities in the wards, writes histories on a greater number of cases, and attends no lectures or exercises. Six assistants can simultaneously be taken care of on one medical service of about ninety-bed capacity. The assistants differ from the interns inasmuch as they do not live in the hospital. During the months as assistants, the students also try to finish their reading in the subject and are usually ready at the end of the assistantship to take their examination in medicine. The amount of reading required varies, of course, with different subjects and with different professors. As a whole, the courses might be considered as being rather comprehensive. The examination is given individually and consists of both a practical test and an oral examination. The student is entitled to take this examination any time during the school year, within two weeks from the day he signs up for it.

This brings out an important point of difference between the American and European system of higher education, a point well known and always emphasized by American writers on the subject.



The progress of the individual student is of little concern to his alma mater; the university arranges certain courses and offers certain opportunities and it is left to the student to avail himself of these opportunities. The medical course under discussion is so arranged that it can be absolved in seven and one-half years, but the strict adherence to the plan is left to the student. He might be a slow student who needs more time for his reading in preparation for the different examinations, or a most brilliant student possessed with the overconsciousness of youth which leads him into more comprehensive studies; he might take a year as fulltime assistant in any of the laboratory subjects before finishing his course, or seek the opportunity to substitute as an intern before he takes his final degree, a rare opportunity at the present because of the temporary overproduction of physicians in Sweden during the last few years.

The aim of medical education has been to produce safe physicians well trained along practical lines. The requirements as to the scientific standard have, on the whole, been well looked after but not much talked about. The preponderance of the theoretical ballast that the doctors have carried with them out in life has been along morphological, serological and bacteriological lines. A shift is to a certain extent taking place toward a greater familiarity with physiological and chemical clinical problems, this, perhaps, being particularly true for the graduates from the University of Lund.

So far we have left unanswered our first question as to the student's training before entering the medical school. On the point where the American student is generally admitted to be weakest, the European boy is strongest—in the knowledge of foreign languages. A Swedish boy starts to learn his first foreign language—German—at the age of 9, and when he graduates at 17 or 18 he has a good reading knowledge of English and German and usually also a fair knowledge of French. Latin, on the contrary, is no longer required.

If the boy has made up his mind early enough to study medicine, and accordingly has chosen the science course straight through the gymnasium, he will have had a little more mathematics (introduction to calculus) than corresponds to the premedical requirements in this country. He will further have had a complete course in elementary physics, possibly somewhat more comprehensive than his young American colleague. This is explained by the fact that the science line in the Swedish gymnasium was originally arranged to supply the Institute of Technology with properly prepared students. In chemistry, as well as in animal biology, his preparation is insufficient. To take care of this deficiency, the first half year in the

medical school (really four months only, since eight months constitute the whole academic year at the Swedish universities) is devoted to courses in comparative anatomy and general chemistry. The comparative anatomy course is most likely less comprehensive than the corresponding American course. The same is undoubtedly the case with chemistry. There is in this course very little laboratory work given in organic chemistry, no quantitative analysis and no physical chemistry. Also, the subsequent course in biochemistry gives decidedly less of quantitative work than the corresponding course at the leading American medical schools. The course in physiology likewise is apt to be more comprehensive in this country.

Instead of a summary of these brief remarks, may I express my personal belief that there is a definite value in any arrangement that makes it possible for the young man or woman who intends to train for the medical profession to enter on medical studies earlier than is now being done. He would approach his work with a fresher mind, less concerned with the practical phase of his studies. He would still be capable of being thrilled by the facts revealed in the fundamental subjects. And yet, he would have time for pursuing the practical subjects at a less rushed pace than at present.

To the skeptic, however, the question will always return, how much importance is to be ascribed to the arrangement of courses or to the methods of teaching. Perhaps, their chief value is to be found in the selection and shifting of the student material. If this is the case, might the shifting not be most effectively accomplished by a system like the European, that leaves the whole responsibility for progress or failure with the student himself?

## PERIODIC HEALTH EXAMINATIONS AMONG MEDICAL STUDENTS

EDSON B. HECK

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In the early part of 1924, through the cooperation of the department of medicine and of public health administration, the periodic health examination was instituted at the College of Physicians and Surgeons, Columbia University. Introduced at first on a purely optional basis, the new service met with a most gratifying response on the part of the students, 104, or approximately 25 per cent of



the entire enrollment, availing themselves of the opportunity to be examined during the four months period over which this service was conducted. In the fall of the same year, annual physical examination was made a required part of the college curriculum. At the moment of writing, over 1,200 examinations have been made on 655 different students.

#### PURPOSE

The natural query as to why add another requirement to the already overburdened curriculum of the medical student, constitutes a challenge which cannot be ignored and which can only be disposed of by a full discussion of the facts. It brings up the question of the desirability of the periodic health examination, in general, and more specifically its applicability to the medical student. If the periodic examination is worthless as a health measure, its introduction into a medical school is waste effort and unnecessary expense. If productive of good, there can be no question that the medical student should receive the same benefits offered to college, industrial and insurance groups. The value of the health examination, as demonstrated by results obtained by the Metropolitan Life Insurance Company and various large industrial corporations in the past few years, seems established too firmly to warrant argument. We are concerned here only with the place of the periodic examination in the medical curriculum.

The medical student presents a peculiar problem. He enters school with, perhaps, more than the average quota of "health." He has been to a college where physical examination, adequate or inadequate, has been the rule. He has been drilled in the fundamental laws of hygiene, often to the point of boredom. His exercise has been carefully supervised; his ills have been attended to by the college infirmary. Except around examination time, his academic duties have not been pressing and have given him little concern. After graduation, he exchanges the amenities of the college campus for the rigorous regimen of the medical school. During the next four years, his life is a round of lectures, laboratory work and clinics which leave little time for recreation and less for exercise. The spirit of competition is great and he must work at a continuous high pitch to keep his place among his fellows. He is, perhaps, learning to concentrate on his studies for the first time in his life. The prodigious memory feats of the first two years, an unavoidable but particularly worrisome feature of medicine, harass him constantly. With the stress of his new environment to which he is not yet com-

pletely adapted come the natural corollaries in the form of insufficient sleep, eye strain, fatigue, disordered digestion, etc. In other words, there is a definite break in his accustomed manner of living and one not for the better. It is an ironic fact that in most medical schools little or no attention is given to the student in the matter of his own health. Although in the present day schools there is nothing comparable to the early days of medical education, when the incident of sickness among students almost amounted to a scandal, I feel, nevertheless, that most of the schools are singularly neglectful in providing adequate medical supervision for their undergraduates. We do not claim to be the first or only medical school to recognize this deficiency, but merely wish to go on record as offering a health service which is attempting to put into effect certain ideas as to student needs. The success or non-success of such an experiment over a short period of time can be gauged only by general impressions and must be the subject of a later report when sufficient statistical data have been compiled to make analysis worth while. To date, we feel that the results obtained more than justify the trial.

There is another phase of medical student examinations that deserves comment. We are dealing with a group of men and women to whom the method of history-taking and examination is of peculiar interest. Unlike the layman to whom a compulsory physical examination is so often either a necessary evil to be gotten through with as quickly as possible or a terrifying experience that smacks of the inquisition, the medical student approaches the examination in the dual rôle of physician and patient. Not only is he concerned with the results of the examination, but he is vitally interested in how it is done. The entire method of handling the patient from the family history to the final instructions passes in review before him. We have attempted to conduct the examination in such a way that it will serve as a model to the student in his future experience. In no other department is the examination of the relatively healthy individual taught as it is here, in surroundings that more nearly approach those of the private office rather than the clinic. Thus, in addition to merely fulfilling the requirement of a health measure, the periodic examination has a definite educational value that the student has no opportunity to acquire elsewhere, under such favorable conditions.

No organized effort has been made to determine the attitude of the students toward the examination, so I can speak only in terms of impressions. From what I have gathered in casual conversation with the students, most of them have liked it and have felt they have got-

ten something out of it. Many have benefitted directly or indirectly by it; some remarkably so. There are a few, no doubt, who regard it as futile gesture or as an imposition on their time, but these appear to form a very small minority. As regards the faculty, most of the members with whom I have spoken are heartily in favor of it. One or two have been noncommittal and, I am inclined to suspect, look on it as a frill.

#### METHOD OF EXAMINATION

From the onset this has been a one-man clinic. It has, therefore, both the advantages and disadvantages of the examination by the general practitioner. In this advanced day of medical science it is not to be expected that one man can possibly be expert in all fields of medical investigation. The ideal examiner is one who has been trained in the field of internal medicine but who has had enough experience in the "specialities" to be able to recognize the more obvious defects in organ systems with which he is not intimately acquainted. To be sure, impairments needing attention (particularly ocular and dental) will be missed from time to time by the general practitioner, but I think that in the long run, the percentage of errors will be small, provided, that the examiner is conscientious and painstaking and will refer his patient to the specialist when in doubt. The possibility of oversight is, it seems to me, more than compensated for by the fact that the various data have been surveyed as a whole and can be correlated better by one man than by several. In addition to the examiner, there is a trained woman assistant who attends to the clerical work, arranges schedules and conducts the more mechanical part of the examination.

The examinations are started at the beginning of the school year and run through into May. Three mornings a week are devoted to the task. Five students each morning are all that can be handled comfortably; appointments are spaced at 35 minute intervals. As there are just about 400 students enrolled in the school, it will be seen that approximately 90 working days are required to complete the schedule. In addition to new examinations, there is a variable amount of follow-up work which is either squeezed in between examinations or done at the end of the morning.

Before coming to his appointment, the student is presented with a history blank which he fills out at his leisure. On his arrival at the clinic, he is taken in charge by the assistant who records his pulse and hemoglobin. He is then put through a simple exercise tolerance test, pulse readings being taken before, immediately after

and two minutes later. His vision is tested with the Snellen charts. He is now conducted into the examiner's room. The history is scanned and any deviations from the normal are noted (and, if necessary, further elaborated by the student). The examination is completed by the physician who makes a systematic investigation of the entire body. It is not necessary to detail the method here as the technic of physical examinations is too well-known to justify repetition. The men students are examined completely stripped; the women wear a special gown that allows free excess to any part of the body. In addition to the ordinary methods of examination, heights, weights and vital capacity readings are taken; measurements of the abdomen and of the expanded and contracted chest are made. Rectal examinations are performed routinely among the men; among the women only when indicated by a history of rectal trouble. Vaginal examinations are dispensed with as unnecessary and undesirable. When indicated, they have been performed by some member of the gynecological staff at his office. A urine specimen is obtained and is examined for specific gravity, albumen, sugar, casts, red cells, pus, etc. Blood Wassermanns are not performed as a routine, nor are dental films taken.

At the end of the examination, the positive findings are summarized. Any defects, if present, are called to the student's attention and suggestions are made for their correction. Symptoms for which no organic basis can be found are discussed from the point of view of their probable origin, and means of prevention or relief are outlined. In the group of relatively healthy individuals, it must be apparent that symptoms of a functional or physiologic nature will far outnumber those associated with an actual organic or anatomic lesion. This has been found to be true with the group I have studied. The work is, therefore, preclinical medicine in the true sense, i. e., a probing into the earliest beginnings of disease. Many symptoms, it is true, are only transient and can be cleared up by bringing a student to a proper understanding of his complaint and by giving him a rational basis for its control. A concrete example is that afforded by the great number of complaints of palpitation, dyspnea, joint twinges, etc., among the students who are studying rheumatic heart disease. Explanation and reassurance are the big factors here. Other symptoms must, however, be viewed in a more serious light in that they may represent early forerunners of disease. I refer to such phenomena as paroxysmal tachycardia, achlorhydria, persistent mild hypertension, palpable or tortuous arteries, etc. The correct interpretation of these signs is a difficult problem and a most

important one. Here the follow-up is the all-essential factor. Pre-clinical medicine is still not far beyond the stage of refined guess-work. If it is to amount to anything more, studies such as these may, if carried on more extensively and over a period of years, offer a means of approach that may have a very real bearing on the problem.

As stated above, the incidence of serious organic defect is not high. Minor defects, however, are common and most of them are easily remediable. Infected tonsils, bad teeth, nasal obstruction and uncorrected refractive errors make up the bulk of this class of defects. Others are of a more permanent nature and are not amenable to treatment; they may or may not act as a handicap. Here it is simply a question of obtaining the best possible adjustment, both physical and mental, under the circumstances. In this class belong the deformities resulting from badly reduced fractures or from early poliomyelitis or hip-joint disease, deafness from old middle ear disease, congenital eye conditions, etc.

#### TREATMENT

How far should a health clinic of this sort go in actually caring for the persons examined? It must be evident from the above description of our service that with the pressure of five full examinations a morning little time is left for therapy. I have, therefore, adopted a policy of confining myself to the more general aspects of the case. Hygienic instruction—advice as to the mode of life, exercise, diet, etc.—properly come within my sphere. More specific therapy, I feel, can best be handled elsewhere. Obviously, such a course cannot be taken in the average health clinic. Here, however, we are fortunate in being in a center where there need be no lack of medical attention. With the Vanderbilt Clinic at our doors, we have recourse to a large group of special clinics. Except where office treatment is considered more desirable, or where the student has his own private physician, the clinic offers the best means for taking care of the students' medical needs. Here they are treated by men, often their instructors, who are interested in them and are anxious to cooperate and they rarely fail to receive prompt and thorough attention. With the student goes a consultation slip with its request for examination, opinion and treatment; this is later returned with the clinic's report and is filed with the student's record.

In addition to its clinics, the school affords roentgen-ray and laboratory facilities of which considerable use is made. Occasionally, one of the staff of the Presbyterian Hospital is called upon for consultation. More rarely the student is referred to a specialist

unconnected with the university. When he expresses a desire to go to his own doctor, he is encouraged to do so. We especially wish to avoid a suggestion of paternalism in the conduct of the clinic and I have therefore, always allowed the student a freedom of choice. Being in contact with a great many medical men, the student naturally has his preferences, and it has been thought unwise to interfere with his own wishes in the matter, the main point being to make sure that he has been properly directed and has done what he intended to do. It would appear from the above that the service is not centralized as one would like to have it. This is undoubtedly true. With the exception of the Vanderbilt Clinic staff, the hospital consultants are pretty well scattered over the entire city. Under present conditions this state of affairs is scarcely avoidable. It is hoped that with the establishment of the new medical center in 1928, the activities of the service can be confined to one restricted area. With the completeness of the center's facilities, this should lead to a much better organization than now exists.

In addition to the routine examinations and the follow-up work, there is some slight demand made on our service as a dispensary. Students keep dropping in at odd times with minor ailments. With these the same policy expressed above is pursued. The simpler conditions are handled by the examiner; others requiring special care—surgical, ophthalmological, dermatological, orthopedic, etc.—are referred to the proper department. The clinic thus serves as a clearing house rather than as an actual dispensary. Although the health service has purposely avoided giving the impression that it is a place for treatment, it has encouraged the student to report his ills so that proper disposal may be made. This plan is not only of advantage to the student who may thereby get more adequate treatment than he would if left to his own resources but it enables the examiner to keep a more careful check on the health condition of the school. Many students, particularly those of the last two years, who have a wide acquaintance among the teaching staff, go to their medical advisors directly instead of consulting the health service first. Although this tends toward a rather haphazard distribution of medical attention, a record of these visits with their results can be obtained with a fair degree of accuracy at the following annual examination. I feel that allowing the student the utmost liberty in his choice of consultants is preferable to insisting on a preliminary consultation in the health clinic.

In any non-resident group of individuals it is difficult to keep a perfect record of current illnesses. Short absences due to ill health



are often unnoted in the classroom and are usually not reported afterward. Longer absences generally come to the attention of the dean's office, and, when due to illness, are reported to me. In other instances reports are sent in to me by the students themselves.

The health service has as yet made no provision for the care of sick students in their rooms, although I have unofficially attended a few at their request. There has been little demand for such a service inasmuch as the great majority of students are nearby residents and can go to their homes where they are treated by their family physician. The others have for the most part called upon physicians whom they have known in the school.

#### EQUIPMENT AND RECORDS

The Student Health Service at present occupies two small rooms belonging to the neurological department of the Vanderbilt Clinic. One is occupied by the secretary and contains a typewriter desk and a filing cabinet wherein the records, card indexes, correspondence, linen and some of the examining instruments are kept. The other room is strictly for examining and consulting purposes. It contains a desk, an examining couch, a table for diagnostic instruments, a wash-basin, scales and a wall cabinet for extra supplies. The physical needs for such a clinic are not great. The amount of space and furniture necessary are just about what the average internist would require for his private office.

The student's four year record is charted on a single piece of paper. This is folded so as to make a double sheet of  $9\frac{1}{2} \times 11\frac{3}{4}$  inches. The first two pages are devoted to historical data, the last two to physical findings. The headings are printed in column formation at the left hand margin. On the history pages the headings are arranged in the same order as they appear in the questionnaire. This enables the secretary to transcribe the student's answers from the questionnaire to the chart with a minimum of effort. Each page is divided into four columns, each representing one year. After the first examination, the student is not required to fill out any further questionnaires, thus obviating needless repetition on his part. Any new material is elicited by direct questioning and is listed in its proper place, the unchanged items being carried over from the previous year by appropriate signs. Physical findings are recorded by the examiner during and after the examination. On the last page space is allowed for summary, laboratory reports, follow-up notes, etc. The advantage of this chart is that data are assembled over a period of four years in such a way that by simply

reading across the pages, year by year comparisons can readily be made.

On his first visit to the clinic a serial number, issued chronologically, is assigned to the student. The number is then put on the chart and serves as its only means of identification. The questionnaire, after it has been transcribed, is destroyed. The charts are filed in a numerical order in manila folders, ten charts to a folder. For our own use, an alphabetical index of student's names is kept on hand. This enables us to refer back to the file when a chart is wanted. The purpose of omitting names from the charts is simply for the protection of the student. No objection has been made to the use of the files by accredited individuals who are in search of statistical material. Nevertheless, as the data are of a confidential nature, the reason for preserving anonymity will be obvious.

#### CONCLUSIONS

A student health service has been in operation at the College of Physicians and Surgeons for the past three years which has sought, by means of an annual physical examination, to achieve the following ideals:

To ascertain as closely as possible the health status of the medical student with the view toward helping him to keep himself physically fit.

To attempt to evaluate the importance of symptoms and physical signs in the hope that early indications of disease may be recognized and promptly treated.

To provide a model physical examination for the student in the hope that he will thereby be better qualified to practice it himself in later years, a requirement that will surely be demanded of the practitioner of the future.

This paper is offered merely as a preliminary announcement of a particular type of student health service—one which concerns itself not so much with the treatment of disease as with its prevention, and which attempts to educate its clients, both as patient and doctor, by the method of example and suggestion. It is beyond the scope of this report to detail results accomplished. The service is still young and sufficient time has not yet elapsed to warrant tabulation of our findings. The good accomplished in individual instances has, however, encouraged us to believe that the service is fulfilling its purpose adequately. Before the total result can be expressed graphically there must be an immense amount of correlation of accumulated data. This will be the subject of future papers.



## PRE-WAR MEDICAL EDUCATION IN AUSTRIA

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Ever since I have become acquainted with the methods and equipment of the leading American schools, I have frequently asked myself how it is possible that European schools, with their overcrowding, lack of means and comparative freedom of learning, are able to compete with them in the output of about the same quality of physicians. I studied at the Czech University of Prague, which at that time belonged to Austria. The successory states are still working on approximately the same basis, and so is Germany. Therefore, this study is not purely historical.

The methods of teaching over there are in some respects almost the opposite of those followed here. The difference is apparent in the secondary schools, which are entered at the age of 10 or 11. It is necessary, therefore, to begin almost at the bottom in order that I might be able to explain some good points of the continental system. This is especially important because, if I may express my opinion in advance, it is chiefly the preliminary schooling which enables the Continental universities to be as successful with their students as good American schools are.

## THE GYMNASIUM

*Non vitae, sed scholae discimus.*

I know that my opinion as to what constitutes the value of this secondary school (gymnasium) is not shared in the old country by any number of those who went through the same mill; in fact, I do not know of anyone. The natural hatred of every human being trained by force explains the widespread dislike of practically all the alumni for the gymnasium, and I was not an exception to this rule while I was going through it. Even those who are theoretically in favor of that school, complain that too much stress was put on the formal analysis of the classics and too little time devoted to the beauties of classical culture. I fear that these admirers of old cultures will disagree with me even more than will the opponents of the old type of gymnasium.

The gymnasium with its final "examination of maturity," was the only school which entitled to the study of medicine. Graduates from other (so-called "real") schools of equal rank had to pass an additional examination in Latin, Greek, logic and psychology, which

was not easy. The gymnasium course lasted eight years (age 10 or 11 to 18 or 19). The teachers were of high grade: all of them had to study after the gymnasium for four years at the philosophical faculty and a large percentage of them had taken their Ph.D. Their salary was as low as that of other state officials—mostly corresponding to the rank of major with automatic advancement to the next rank. Only a few reached the rank corresponding to that of colonel. University teachers were only one rank higher. Yet their social standing was good, and the hours few (nineteen a week, if I remember correctly, with additional pay for extra hours); their title was "professor." Dismissal was possible only for criminal offenses. After retiring, the teachers received a pension and their widows and minor children were also provided for. Before being appointed as gymnasium teachers, they had to learn a great deal more than they needed for their students—which is the only way to give the teacher the necessary feeling of superiority and at least a half-hearted acknowledgment of it by the students.

The gymnasium was never supposed to be a school for the general public: the schools were few, the classes small (20 to 40 pupils), and admission was, and still is, by examination (10-year old children), held at the gymnasium, not at the grammar school. There was little chance to get in, if the child was not on an extremely friendly footing with spelling and the *regula de tri*. Further sifting was done in the lower classes, especially in the fourth. Those who left the school then ("lower gymnasium") could turn to better grade professional or business schools which had the legal standing of the higher gymnasium, except in regard to the admission to the university.

A great deal of time was spent studying the classical languages: eight hours a week for two years and six hours a week for six years of Latin, five hours a week for five years of Greek and most of it was devoted to the purely formal aspect of the language. I learned more about the Roman culture in the afternoons which I spent reading at home those poems of Horatius which are entirely unsuitable for any school, and fragments of Petronius which cannot be printed in their entirety in English. I wonder whether this is the classical culture I hear about or whether its partisans mean the Homeric man-eating period. Are we to admire Socrates' sophistic method of presentation of nice thoughts or the culture of his time, evidenced in his legalized murder, for political reasons and under a bigot pretext? The classical culture was superior to the Continental at the time of the renaissance—but not now.

I had occasion to compare especially two teachers, both Ph.Ds., and admit that my estimate of their value for our training was widely different both then and now. One was the typical, strict, and—in spite of his love for his subject—dry, formalistic teacher of Latin, insisting on hair-splitting analysis of every sentence. The other was a modern pedagogue, young, but at that time already docent at the University, who translated with us, without preparation and without hair-splitting, long, well-selected passages from the *Odyssey* and from Demosthenes, and gave us as vivid a picture of the Greek culture as was compatible with the respectable moral traditions of a gymnasium. The former was naturally disliked by us; the latter well liked. The former's lessons were tedious and required good preparation at home on the part of those who were not advanced in Latin beyond the requirements; the latter's lesson was a pleasure, with no preparation needed. I fear that the former did more for his pupils in teaching them how to study unpleasant subjects.

Logic, of course, again presented in a scholastic way, did not make any difficulties after that. The mother language (Bohemian) and at least one other modern language (German) were required, the former being studied in the whole historic development of its grammar. Modern authors were either omitted or cut *ad usum Delphini*. Mathematics included a good deal of algebra (stopping only at calculus), trigonometry and analytical geometry. Physics was taught to an extent sufficient in the medical school. Chemistry was largely neglected. The quality of history teaching depended on the teacher's cultural additions. Natural history was fair, evolution, however, was tacitly, although not successfully disregarded in the gymnasium because of the influence of the Hapsburg family. This was, of course, different at the University with its freedom of teaching.

Crafts were not taught, except elective drawing. Social activities were nil, and since co-education was an exception (only where there were no gymnasiums for girls), sexual activities were restricted to the outside and usually deferred until after graduation. I have a strong impression that they do not begin there as early as here. Athletics—in spite of the name of the school—did not enter into the curriculum until recently, except as an elective course.

The hours were not long: four times a week, from 8 to 1 o'clock and twice a week from 8 to 12 o'clock. Therefore, the talented students had a good deal of time for reading what they liked and even for visiting, as stowaways, without registering, some lectures at the University. I remember that Masaryk's lectures were especial fa-

vorites in this respect. The less talented students had plenty to do to prepare the lessons. It goes without saying that a certain amount of brains was necessary even for the latter group.

This free time is probably responsible—together with the general tradition—for the amount of education usually found in gymnasium graduates. The school contributes only indirectly by training them to think.

The seventh and eighth years of the gymnasium, with its courses in logic and psychology, analytic geometry, physics, besides higher classics, such as Tacitus, Horatius and Sophocles, were probably better than the first two years of the American colleges, and as a preparation for further study, they were probably superior to the junior and senior years. They were decidedly inferior to the American college as a training for practical life. This is the point I want to stress: the gymnasium is valuable only as a preparation for study, not as an acquisition of earning power. We boys used to laugh, when any of our teachers tried to convince us that—“*non scholae, sed vitae discimus*” (with an interesting discussion about the dative). I still think that this slogan was utterly out of place in the old gymnasium, where we were not taught one grain of directly useful knowledge—except, perhaps, mathematics, since spelling was an art to be mastered before we entered the gymnasium. Yet, I am beginning to think that the more applicable, reversed slogan “*non vitae, sed scholae discimus*” has also its justification for boys who are going to attend another school later, to get the real training for their life work.

I do not claim that teaching Latin in this tedious way is the only possible preparation for higher studies. I have heard Dr. Ludvig Hektoen say that the advantage of Latin is that it is a subject which the student cannot dodge successfully and simply has to learn. I do not doubt that, for instance, higher mathematics require and teach an even more disciplined thinking than Latin and stimulate the imagination much more, if properly taught. Unfortunately, there are not enough teachers and fewer students who would be able to do this successfully. Nevertheless, the experiment would be worth trying, for instance, in one of the schools of a large city, and the information gained by the study of mathematics, would be of direct use in medical science.

It is a peculiar fact that the average gymnasium graduate was formally (not always intellectually) superior to the graduate of the so-called “Real-schule,” which was of equal rank with it, but prepared for technical universities. Instead of the classical languages,

the "real" schools taught French, technical drawing and chemistry, requiring more hours. It also was the general opinion that a gymnasium graduate, after taking a one-year business course, was superior to the student who took only the lower gymnasium and four years of a good business academy instead of the four upper classes of the gymnasium.

I recently read bitter recriminations against the gymnasium, written by a man who is in favor of classical education, but violently opposed to the formalism: "not until the rule was sitting firmly in the ear did they open the door." That is, in my opinion, exactly the moment where the door to the almost complete freedom of the Continental university should be opened—not before that. It is too bad, but unavoidable, that the doors cannot open earlier for those who have grasped the rule before the time, but such boys have a much better time of it than they imagine, while still under the thumb of the gymnasium authorities.

I believe that the gymnasium owed its stern persistence to the monarchistic forms of government. The sons of the then ruling class usually studied it only privately, passing their examinations with invariable success at the end of every year. Thus, the aristocracy had its credit insured, and had no reason to desire a change of the school which furnished them with the necessary credits and provided, besides, an excellent preliminary training for the really working part of the governmental machine, of which they were the predestined and sometimes empty heads. The middle class man who also happened to have a dumb son, despairingly took him from the school. The children of aristocrats lost most of their privileges now, and men who still bear their childish hatred of the gymnasium and who see their weaker sons suffering even more under the rigid training, have the power to change conditions. They use it for an Americanization of the curriculum, as they call it, selecting, of course, with an admirable dexterity, the weakest points of their model. The requirements are being lowered, formalistic parts are being restricted considerably, and athletics are fostered while they were disdained before.\*

Gymnasium, if taken in the original athletic sense of the word, certainly is an odd name for a place without athletics; yet, our teacher used to call it "palaistra of the mind," which made us laugh—but he was right. Let us hope, that the force of tradition will preserve at least some of the *nescio quid*, which trained students for thinking, or at least for learning, instead of for life.

\*Thomayer, professor of internal medicine at Prague, used to call physical education "the breeding of healthy dumbbells."

## ADMISSION TO THE UNIVERSITY

At the end of the gymnasium courses the much dreaded (I do not know why) "examination of maturity" has to be passed. The "maturity" must be taken *cum grano salis*. The certificate reads only: "ripe to attend the university."

On the Continent, the medical school is an integral part of a "*universitas litterarum*"; the age-old division into four faculties (theology, law, medicine and philosophy) still prevails in most universities with only slight modifications. Technical sciences are relegated to schools of equal rank which have various names (polytechnicum,—technical high school). This applies still more to higher business training. Even the future lawyer receives the degree of "doctor of both laws"—namely the Roman and the Canonic, but not of any actual law with which his profession is concerned directly. The assumption that the university is not devoted to anything useful went so far that a Ph.D. in chemistry had in Austria no right to start a chemical manufacture of his own, while the chemical engineer who graduated from a technical school, and even an engineer who graduated only from a professional school of the rank of a gymnasium, had this right. Fortunately, the principle was not carried to this extreme with the medical faculty, where the graduate obtains a state license without further trouble.

Anybody who has passed the examination of maturity has the *right* to register at any faculty he chooses, regardless of overcrowding. Periodic attempts at restricting of the number of students to be matriculated are being made in some countries, but they only serve to exclude a few national or racial groups and do not decrease the overcrowding. There are only two factors which counteract it to some extent: one is the expectation of lack of employment in an overcrowded profession, and the other is the fact that only a small percentage of the population attends a gymnasium and a still smaller one graduates from it. In spite of this, the attendance is large: it is not unusual to have a thousand students registered in a medical faculty and nothing can be done, even if two thousand matriculate the next year. Three and, I believe, five thousand students, are registered at some medical faculties. Worse than this is the fact that the teaching facilities cannot be increased proportionately. The overcrowding may be so great that there is simply not enough standing room even in the large lecture halls. The eager students get in and the rest do not care. Personally, I do not believe that they lose very much when deprived of clinics consisting chiefly of

recitations. There are enough elective courses where any one may learn. After graduation, they get into much more intimate contact with the leading man they select to study under and they can learn much more from him when they take part in his clinical visits and work there besides. The whole clinic is devoted exclusively to teaching and research.

#### THE STUDENTS: FREEDOM OF LEARNING

The step between the gymnasium and the university is great and much more sudden than between the high school, college and medical school here. A few casualties result. The freedom of the students in the American high school is much greater in every way, including the choice of courses, than in the old country gymnasium; the freedom in the college and medical school is much smaller. There is not much difference in the scholastic standing—nor in the behavior—of an American high school boy and college student, while such a difference is emphasized in the old country. This probably accounts for the absence on the European Continent of most of the childish customs of American college boys. Hazing, freshmen's caps, or cheer leading would be rigidly suppressed by the gymnasium authorities, or sneered at by the university students, who proudly regard themselves as academic citizens. The feeling of self-respect is sufficiently developed, and, consequently, freshmen would not submit to collective indignities, even if such a custom would satisfy their sadistic instincts one year later. Besides this, there is no class loyalty or school loyalty on the Continent. Such a feeling needs to be instilled early. This would be extremely difficult in the gymnasium, where the students hate their particular school above all others. Fights occur, but they are real, usually over political differences and regardless of the class. Students are more interested in public problems in Europe than are students in America, and form, as a rule, the cleanest group in the political party to which they belong.

Although the legal privileges of academic citizens have been considerably restricted since the time described by Mark Twain in his "Innocents Abroad," there still remains much in the unwritten law. For instance, the identity card is sufficient for the policeman in minor disturbances of peace. Policemen will not enter the premises of the university without special orders (as a rule, suggested by the university authorities.) I know of a case where a group of policemen pursuing a somewhat noisy party of medical students stopped before the entrance to an institute, although they had the



legal right to proceed, simply on being reminded by the janitor that this is academic soil. Unfortunately, the students were so elated by their privilege that they remained in the doorway exchanging appropriate remarks with the officers, who recognized them the next day on the street.

Autonomy and freedom of teaching and learning are among the most valued possessions of the Continental universities and are not given up easily, even if it were evident that other advantages might be gained by restrictions. Freedom of teaching and learning is guaranteed by the Constitution of several European countries.

Freedom of learning means, of course, in relation to the university, that every citizen qualified by the examination of maturity has the right to attend any course offered. Custom has extended the meaning of this freedom also to the negative side, namely, the privilege not to attend the courses if the student does not like them and yet to get the credit in most cases. This part of the freedom is utilized to the extreme in the law schools where only a small minority of the students attend all the lectures for which they have to register. The students rely on their ability to learn the subject matter necessary for passing an examination without this waste of time. Only exceptionally good teachers attract crowds. The number of practical courses at the medical faculty restricts this freedom. The student has to show credits for having really practiced anatomy and other subjects before he is admitted to the examinations. Nevertheless, a roll call is unheard of and probably would be answered by a strike of the students. This liberality has the disadvantage that a weak-minded student easily lags behind the others, and either stops studying (this might just as well be regarded as an advantage of the system), or it takes him much longer to graduate. Six years instead of five and a quarter are common, but attendance for ten or twelve years also has been known to occur. There are in all schools at least reminiscences of "bemooste Häupter" who made chronic registration at the university their life work, especially since the expense is insignificant.

The possibility offered to interested students to get much more practical training than they would have gotten if everyone insisted on his right, is one of the great advantages of this freedom of attendance. The freedom of teaching and learning is also valuable because of the possibility to attend a great variety of courses and teachers as well as because of the possibility to dodge tedious recitals of facts to be found in books. I remember a psychiatrist who



gave the main clinic (five hours a week) to hardly 10 per cent. of the students who were registered for it. He had written a good book, but the clinic was dull—consisting chiefly of the presentation of recovering patients—and besides, it started before 7 a. m. An associate professor of the same department had, in spite of the elective registration for his course, plenty of students, and his class, nominally one hour a week, usually lasted for two or more hours “upon request.” We had to examine the patients and make the diagnosis ourselves, and really learned something about psychiatry. Men who had for some unknown reason attended the main clinic showed no advantage over the beginners in the latter course. It would have been a sheer waste of time to follow the prescribed lectures. The flexibility of this system is a great advantage for a good teacher and student and a source of danger for the bad student. It is even somewhat dangerous to the good student with one-sided inclinations, because it seduces him to specialize too soon. This is counterbalanced only by the rigid requirements in examinations. The American system enforces a more universal training.

Our attitude toward most of our teachers was an expectant one: they had to prove their superiority. There were, of course, a few favorable and a few unfavorable exceptions to this rule, due to mass suggestion. Now this mass suggestion is rampant here and, what is sad for those who are in favor of a critical attitude, it is almost invariably that of “*iurare in verba magistri*” and in the infallibility of the methods which are taught. I once asked my hematology class how they could tell that the blood slides under the microscope were from a toe dancer. Although I always try to emphasize the limitations of one diagnostic method, all ten students tried to solve the problem by the microscope until they were told that the answer can be found only by taking the history of the patient. I feel sure that this experiment could be repeated almost anywhere here with equally dismaying success. I believe that a good preliminary training in disciplined thinking would improve the critical abilities of the students.

I will return to the subject of teaching when dealing with the faculty.

The long legal vacations were illegally prolonged according to the whim of the students. If Sundays were included, not much more than half the year was spent in teaching. The vacations were, however, necessary for the practical training of the students as clinical famili and for preparation for examinations.

## EXAMINATIONS

Examinations are more important in Europe than here because no credits are accepted as part of the examination. Examinations in the basic subjects (physics, chemistry, biology, anatomy, histology and physiology) were held toward the end of the second year and at the beginning of the third. The student reported to the dean when he felt ready in one subject and the dean designated a few of the candidates at a time for the examination, which was oral, public and, with few exceptions, both practical and theoretical. The ordinary professor of the subject examined them (his fee was \$4.00) and fixed the grade, although the examination was conducted theoretically also by the dean and by a physician delegated by the state (the graduation also meant state licensure). The latter two gentlemen stepped in for a while, listened to some news or jokes, or told them, and departed. Only three grades were given: excellent, sufficient and not sufficient. If four out of six subjects were passed with the grade "excellent," the examination was passed with honors. There were, however, teachers who were in favor of two grades only. Failure in four subjects entailed the repetition of the whole examination. Failure in less than four subjects could be remedied by repeating the examinations in the respective subjects after two, three or six months. If a man failed twice in the same subject, he was excluded from further attempts, except by special permission of the secretary of the state.

Clinical registrations were valid only after the student had passed this first so-called "severe examination" (*examen rigorosum*.) Three years later he could present himself for the second and third examination, each consisting of two theoretical subjects and four theoretical and practical subjects. Again, each subject was taken separately, at a time chosen by the student. The severity of the examination depended entirely on the teacher and there were, of course, great differences among these men. One would deeply resent a student's deviating from his lectures, and especially if he presented a view unknown to the examiner (which may easily happen with this type of teachers). Another, I recall the pathologist, Hlava, would only get more interested in the candidate and substitute a friendly discussion for his usual grilling. When there were two examiners in the same subject, the students naturally tried to be assigned to the more philanthropic, some of them waiting for a long time till their turn came. The grades were not given on a percentage basis, and the questions were few, but always lead to some others, since the examination was oral. I have seen students flunked at the

very beginning of the examination because they forgot to take the patient's (normal) temperature. Others failed if the theoretical examination revealed some fundamental deficiency, even if all the other questions were answered correctly. Unpleasant as this may be to the student, the method is sound, if the examiner is fair. Suppose the student would answer nine ophthalmologic questions correctly, and in the last answer suggest atropine in the treatment of glaucoma. I believe it is better, if he has to study the matter for a few months longer than if he passes with 90 per cent. success.

The graduation ("promotion to the degree of Doctor of Whole Medicine") is individual or in small groups. Additional degrees were regarded with scorn.

#### THE FACULTY

The teaching staff of the European universities is much smaller in comparison to the number of students than is the case in the American universities. The number of elective courses, however, is much greater.

The university is autonomous, depending practically only for its budget on the state's secretary and parliament. The rector is elected every year, in a certain turn, by the academic senate, and the deans are elected every year by the faculties. It was customary that the professors of the clinical branches resigned, when their turn came, in favor of the theoretical men, since the deanship meant an additional income from the examination fees and involved as little work as the dean chose to do. There cannot be, of course, any fixed policy of any school, at least not a policy determined by one man. In most universities, certain parties are formed among the faculty members but these are never directed to any constructive purposes. All the universities are state institutions, but their autonomy is practically complete. Even when the law gives the opportunity to correct abuse of this power, the state hardly ever interferes. If a complaint is not fully justified, it is promptly rejected by the state's secretary. If it is justified, it is either rejected or tabled. There is no time limit for the actions of a state secretary, nor of the university. I believe that the record is a six years' delay in a nine-year old republic. The possible advantages of complete autonomy of the universities are considered so great in the long run that they outweigh the disadvantages due to temporary abuse of power.

The academic career begins with the assistantship. Some of them are paid, some are not. The assistants help in teaching—even

holding the "big clinics" in the absence of the professor—but do not belong to the faculty. They are the material from which docents arise, as a rule, although the law gives any doctor of medicine the right to petition for a *venia legendi* two years after his graduation. If accepted, he has the right to announce any lecture pertaining to his specialty and cannot be dismissed except for a common crime, or if less than two students register for his lectures (*tres*—including himself—*faciunt collegium*) for more than a year. This rule also applies to all the other members of the faculty, including the ordinary professors. Otherwise, they cannot even be pensioned legally before they are seventy years old (it has been done illegally.) Men with lack of ability retain their positions. The teacher is free in his choice of the subject matter, of the method and of his personal opinions. Bolshevistic negation of the fundamentals of the state, or rude attacks on its president from a reactionary, who suddenly discovered his ultranational heart when it was safe to do so, have no effect on his position at the university. Only the names doctor and docent suggest teaching. The professor presents his convictions about science—and anything else, if he cares. In the latter case, as well as in the former, if his opinions are uninteresting, the students are protected by the somewhat extended meaning of the freedom of learning.

Docents receive only the tuition fees from their students, which meant practically nothing in Austria. They make their living by being assistants in the institutes of the university, by private practice, by inheritance or by marriage. Some of them are commissioned by the state to give certain courses—for instance, physical diagnosis—and are paid. They may remain docents all their lives\* or they may be promoted to so-called extraordinary professors and later on to ordinary professors. The greatest part of research is done by the assistants who want to become docents and by the docents who want to become extraordinary professors, and who have not as yet developed a sufficiently large private practice. Nobody can force any appointed member of the faculty to work. Hence, the old pun: "Die ordentlichen Professoren leisten nichts ausserordentliches und die ausserordentlichen nichts ordentliches." This is, of course not true. Some of them work hard at research, others stimulate it and some of them are, at least, good teachers. For instance, the gynecologist Pawlik made a few excellent investiga-

\*Sigmund Freud obtained the title of professor only because his longevity enabled him to wait until the lack of promotion became a European scandal. His repressed wish to be nominated professor is mentioned in the "Interpretation of Dreams" and analyzed with a resigned humor by the author, fully conscious of "rien ne manque a ma gloire."

tions in his youth and became ordinary professor, after which he stopped working, and being an honest man, he also stopped writing. Yet his lectures on obstetrics were about the best I can imagine. In my time, he was old, and left most of the lecturing to his assistants (nobody can compel a university teacher to do anything he does not care to do), but a few lectures I heard were worth a whole course given by others.

Professor ordinarius would about correspond to the American head of the department, with the exception that the latter is responsible for the success of his whole department, and tries to coordinate the courses given in it. The ordinarius is not only not responsible for the respective subject—there are frequently two or more independent ordinarii in the same department according to the number of institutes or clinics—but he is not even responsible for his own teaching except to his conscience. He remains, however, as a rule, in friendly relations with the docents whom he had suggested for habilitation and allows them the use of clinical material. Some of the docents and extraordinary professors even remain at the clinic as assistants. Very few, if any, teachers try to present the whole subject matter which is to be required by themselves at the examination and prefer to dwell on their favorite topics. The student is supposed to be able to study books independently, and the expounding of research in the lectures is regarded as being just as legitimate, if not more so, than "dictating" information. The consciousness of being one who is professing science—not merely teaching a profession—is deeply rooted.

The teaching of the theoretical subjects, except anatomy and chemistry, was really theoretical. A physiological practicum was prescribed, but only in a few schools was the work really being done by the students; never to such an extent as in America. The teacher decides what has to be done. Our physiologist, partly because of financial restrictions, partly because of his affectation of friendliness to animals (curiously enough, even he was attacked by the local antivivisectionists) considered the demonstration of a few frogs and of glass and rubber models sufficient for a knowledge of experimentation on animals, added some instructive experiments on the physiology of the senses on ourselves, and devoted the rest of the time to the expounding of a pleasing mixture of Bergson's and Driesch's philosophy, forgetting to name the former author. We were shocked and surprised when a year later we saw the experimental pathologist, whom we unjustly regarded as out of date, sacrificing a dog almost daily for two weeks in his lectures on circu-

lation. Yet now, looking back, the picture is different. I still see the pithed dog and remember my disgust, shared by the majority of the class. The blood pressure of the animal falls. The old man grabs the animal's abdomen, compresses it, and we all see the pointer on the sphygmograph rise. I do not care to discuss the comparative effect on our tender minds of the physiologist's experiments on rubber models and the pathologist's rough handling of a living, although unconscious, dog. I know, however, of a few human beings who were benefited by the remembrance of the shocking experiment and the further experiments on the effect of other interventions. I believe that the American system, where there is sufficient money to provide for material for all the students, is still better.

The personality of the teacher can develop fully regardless of his specialty. Therapeutics belongs to the respective clinical branches; for instance, the official designation of internal medicine is special pathology and therapy. Therefore, pharmacology is a purely theoretical subject. In spite of this, when I search my memory for a personification of the wise and gentlemanly general practitioner, such as described usually as a being of the past, and who was probably just as rare then as now, I recall a theoretician: the pharmacologist Chodounsky. He had been a general practitioner before he became a teacher and continued as a family physician even afterward. In his lectures, he always quickly stepped from the reactions of the frogs' ventricles to the question of how to alleviate the physical and even moral sufferings of the human heart. Another pharmacologist might, with equal right, dwell chiefly on the principles of synthesis of drugs. Both would be of more value to the students in their freedom of choice of the subject matter in which they are interested than if they were forced to dispense a prescribed amount of information, such as would satisfy the personal inclinations of a third pharmacologist who, again, might be a good teacher in his line.

The clinical teaching consists partly of the "big clinics" (five times a week, one and a half hours of medicine and the same amount of surgery for four semesters) but a practical knowledge is acquired in numerous small courses given by the docents and extraordinary professors, and also, in the position of so-called famuli at the clinics. The famulus neglects the majority of courses for which he is registered and does the work of an intern: takes pulses, writes histories, and does laboratory work, being the right hand of the responsible assistant of the clinic, whom he also helps in his research. Some of the professors take an active interest in them. For instance, Thomayer personally assigned patients to famuli and

made them read the whole history aloud during his clinical visit, criticising not only the medical but also the stylistic, linguistic and, wherever possible, the involuntarily humorous aspects of it. The position of a famulus does not entitle to any credits. Much practical training of this kind is being acquired during the vacations.

With this exception of the individual clinical famuli who are not registered for their job, there was more theory and especially more of the not directly useful theory and less practical training on patients in the required courses than in America. Just as the student was compelled to select his book, he had to find out by his own initiative where to acquire the practical skill. There were not even any spoon-fed theoretical courses, if I remember correctly, except for the war students. I do not deny their usefulness in time-saving, but they do not contribute to a good digestion and assimilation of the material.

I believe that the average graduate in the old country is less able to do immediately medical work in emergencies than the graduate from a good American school. He has, however, a better opportunity to continue learning and to overcome his deficiencies. In America, the overwhelming majority of graduates get out of the touch of experienced teachers within twelve or eighteen months after their graduation. In Europe, the doctors may practice almost indefinitely at the university clinics.

#### THE BUDGET

All the universities belonged to the state; endowments were an exception, and the budget of a good, small sized American school makes the largest Continental faculty gasp for breath.

The income from the students' fees was negligible: it is a little greater in Germany and serves to improve the salary of the teachers. In Austria the state remitted the fees only to the unpaid teachers. It was a little over two crowns per weekly hour per semester. This amounted, at the utmost, to about \$30.00 a year, but the majority of the students were freed from paying tuition on the basis of real or alleged poverty, whose limits were very liberal. Scholarship did not entitle to free tuition and lack of it did not entail payment of tuition except *de jure*. The students who had to pay, as a rule, did not register for more than the twenty required hours, which meant about \$15.00 a year.

Most of the budgets of the theoretical institutions were measly —I believe that the institute for histology received something around



\$100.00 a year for current expenses. The budgets of the clinics were flexible because of the varying expenses for clinical material. Any attempt of the state to restrict overstepping of the budget by a clinic was answered by the threat that the patients could not be cared for properly and by the pretended concern about subsequent newspaper publicity and trouble in the parliament. It was customary for the assistants of the theoretical institutes to ask their friends at the clinics for all the necessary chemicals and even instruments. If an instrument was expensive, it would have taken ages before it would have been granted or refused by the state secretary. It was much easier to obtain it directly from the dealer and write it off gradually for alleged breakage of glassware, which was within the price limits allowed to the clinic without special permission. I suppose that less of this was done in Germany than in easy-going Austria, but the method was widespread in the latter state, probably with the knowledge of the authorities. They could not have been foolish enough to suppose that an institute could get along on the trifle which they granted.

If I should tell what features of the Continental system I would consider desirable in this country, it would be, first of all, some sort of gymnasium instead of the high school—perhaps an experimental school in connection with the university. The parents would have to be told in advance that the requirements will be rigid, that there will be no choice of courses (in the gymnasium), and that the boys will be less capable of earning their living immediately after graduation than if they had grown up in the woods. One could promise them, however, a good formal training—perhaps with more mathematics and even more dialectics than the old country gymnasium had. One could especially promise them that the boys will know how to learn and perhaps even how to think. Such a school might also try to stimulate the students to acquire a better general literary and philosophical background. It is just as impossible to acquire this by merely taking courses dealing with literature or philosophy as it is impossible to gain weight by hearing lectures on digestion. In both cases, the raw material has to be assimilated by the individual himself, not by hearing about it. It would be splendid to have not only well trained graduates, but also well educated men.

The great freedom of the Continental university is somewhat dangerous, but its drawbacks can be counteracted, to a large extent, by severe examinations. Besides this, we must not forget that the student in America has to pay a large tuition and that he naturally tries to get something for it. Some of the big clinics waste too much



of the student's time. It is possible that the leading men could concentrate their lectures into one brilliant conference per week. Since many states—here as well as in Europe—require credits for a certain amount of hours, it might be well to let the students register according to these requirements and give them the credits, together with the tacit permission to absent themselves from the lectures, while increasing the requirements in examinations. The possibility to register for elective courses is at present rather platonic: the students have no time for them, if they want to take all the required lectures plus some of the nominally elective but technically essential courses. The students of the upper years have no time for research. This time could be gained by dodging the recitations.

The postgraduate work, outside of the short internship, consists here chiefly of courses; in the old country, of clinical practice. It seems to me that one cannot develop into an expert in any branch by taking some more courses. One's own experience, controlled and corrected by a more experienced man, and the factor of time—since even the experience needs ripening—form the only good basis. Reading gives more information in a shorter time than a lecture, if the reader is intelligent. I believe that men should specialize in the greater branches of medicine, such as internal medicine, surgery or gynecology, because they are above the average, not because they are below it. If there can be any doubts about the economic advantages of made-to-order graduates, it can hardly be questioned that it is unwise to attempt to produce spoon-fed experts. Brush-up courses for general practitioners are a different matter, but the expert can develop only at the bed-side of a patient, in continual contact with his betters, and in studying the books and papers without any one's help.

I almost wonder why it is that the results are about the same in the old country and here, namely, a varying amount of creative work and an abundance of "Sitzschwiellentätigkeit" done by the faculties and an output of a few excellent physicians, a considerable number of good ones and a reasonable percentage of failures. This, in spite of the fact that the selection of students is ruled there only by their personal inclinations—not by previous scholarships or arbitrary selection by the medical school; in spite of the ease with which lectures can be dodged; in spite of the fact that the budgets are insufficient and that there is still some of the old tendency to educate at the university for postgraduate training rather than to train directly for the profession. Probably the deficiencies of the old country medical schools are balanced by the better preliminary training and abundance of prolonged practical postgraduate experience.

## A PROPOSED NEW CURRICULUM

FRED C. ZAPFFE

Secretary, Association of American Medical Colleges

The curriculum has been blamed for all the evils of modern medical education. In my opinion, it is a 100 per cent curriculum, but its administration can be improved on to a very considerable degree. This should be the job of medical teachers. It can be done, but only by them, and it calls for the greatest cooperative effort, for patience and much labor.

At present the curriculum is representative, to an alarming degree, of dissociated effort on the part of a group of individuals whose aim is to product a cohesive whole. Each teacher has a keen interest in his pupil, but wholly apart from his relationship with every other teacher. The result is too many "required" hours. Students are not given the opportunity to think; to work on problems that occur to them; to develop initiative; to comprehend understandingly, not merely to memorize; to read current literature.

Murmurings as to too many hours have developed into a hue and cry that threatens to have the opposite effect unless it is hobbled before it will stampede. Bearing in mind that a change should be made, steps should be taken to make that change calmly, free from shackling tradition and solely in the interests of the student. New teaching courses must be outlined in all the subjects embraced in the curriculum on the basis of what the student should know in order to continue his education most effectively after he leaves the medical school.

Unfortunately, we have been trying to stuff him—like a Strasbourg goose—with all the accumulated knowledge in every subject, and he, in the meantime, has been on the qui vive to "get" those things which he knew he must have "at his fingers' ends" in order that he could, later, satisfy the two bogies,—examinations for graduations and for licensure to practice. Truly, the poor student is the victim of a maelstrom of misdirected teaching.

Teachers are unanimously of the opinion that if the student does not get it while they have him—for a specified number of required hours, in a specified year or semester—he will never get it. That is, perhaps to some extent true; but that, too, is a fault in the present scheme of medical education, one which should and can be remedied by working under a cooperative curriculum. That may not be a good term to use, perhaps not even the proper one, but it is sufficiently descriptive to indicate the nature of such a curriculum.

In the olden days of medical schools, a very few men constituted the faculty. Often one man taught three or more subjects. With the tremendous increase in knowledge of disease and the sciences that enter into the diagnosis and treatment of disease, it became necessary that teaching be distributed among more teachers. Today it is not unusual to have the faculty number three, four, or even five hundred men. Eleven thousand (in round numbers) persons are enrolled today in the faculties of the Class A medical schools of the United States and Canada! This steady increase in the numbers of the teaching personnel created more classes, more subjects, each subject gradually losing its contact with every other subject, until the medical curriculum assumed the aspect of numerous independent, apparently unrelated departments, divisions, classes, each presided over by a teacher who also was independent, free, interested solely in jamming into his student as much of the accumulated knowledge in the subject presided over by him as he possibly could in the time allotted to or appropriated by him. The most influential member of the faculty was the best hunter and secured the most game—witness the large numbers of hours scheduled for his subject, without any relation to the curriculum as a whole or any other component subject.

I wonder does any teacher ever stop to think when the poor student gets time to *study* (not memorize) and think and read. He must eat and he must sleep. True, it is said that students play too much, but are they not driven to such recreation in sheer desperation when confronted with the apparent impossibility of ever learning by a sort of mental digestion—in the real sense of the word—what was crammed into them by many teachers, in different subjects, with which they have not had any previous familiarity, in eight or more required hours every day? It is an appalling state of affairs.

Much has been said in recent years of "water-tight" compartments, and much has been done to eliminate the barriers. Much still remains to be done to effect the necessary liberalization of the curriculum and restore its educational effectiveness to what it was when two men constituted the entire faculty.

To my mind, this can be done to best advantage and with the least friction by reducing the number of "required" hours to the lowest possible minimum, providing for a fair number of so-called "required elective" hours, and revising courses and teaching methods so that the student is given the "leads" for acquiring knowledge, rather than information that is contained in textbooks, combining as much as possible the teaching in many subjects, and continuing teaching in virtually all subjects throughout all the years of the cur-

riculum. I do not mean that teaching in all subjects should be begun at the same time and continued for four years or more, but once teaching in any subject is begun, it should be continued, either directly or indirectly; that is, either by particular instruction in a subject, with reference to that subject only, or by correlated instruction with other subjects of which it is an integral part. Thus credits will be given at the end of the fourth year only. The incompetents will have been weeded out long before then. In fact, there should not be any failures after the second semester. With proper selection of students for first matriculation, the percentage of failures will be lessened considerably.

The study of disease is really a study of pathologic anatomy, pathologic physiology, applied biochemistry, applied pharmacology; but, that is not, in the main, the manner in which teaching is done today. Without giving the student time to develop his mental powers, without freeing him from the enormous load of required hours, he is expected to be able to "apply" what he has learned in *ex cathedra* or pedantic fashion. It cannot be done.

Furthermore, the system of teaching in vogue dissociates the fundamental sciences from their clinical application in a purely chronological fashion. Reference to them is made only by clinical teachers whose interest often lies in the domain of practice of medicine rather than in the sound comprehensive study of disease, which is possible only when taught as applied science, and for which there now is no time. Therefore, the prime essential to be considered in the construction of a curriculum based on such a concept of teaching is to reduce the required number of hours to a reasonable minimum, to secure early contact with the clinical side of medicine and to maintain continuous contact with the scientific side until the end of the final year.

With these points in mind, I have outlined a curriculum, which is presented herewith.

#### A CO-OPERATIVE CURRICULUM

Required .....	3240 hrs.
Elective .....	360 "
Total .....	3600 hrs.

34 weeks per year; 27 required hours per week; 2 semesters

By beginning the last week in August, the first semester ends just before Christmas; the second semester, the end of April. Can operate continuously and have third semester in same year, ending with first week in August.

ANATOMY .....	566 hrs.*
PHYSIOLOGY .....	180 " *
PHARMACOLOGY .....	180 " *
(Including Therapeutics)	
BIOCHEMISTRY .....	144 " *
PATHOLOGY .....	300 " *
(Including Parasitology)	
BACTERIOLOGY .....	130 " *
(Including Immunology)	
HYGIENE, SANITATION AND PREVENTIVE MEDICINE.....	128 " *
MEDICINE .....	900 " *
(Including Pediatrics)	
SURGERY .....	540 " *
OBSTETRICS AND GYNECOLOGY.....	170 " *

\* Elective work not included in these hours.

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#### COURSES

ANATOMY	566 hours	Years 1-2-3-4†
Gross.....	1st year	
Microscopic.....	1st year	
Topographic.....	2nd year	
Clinical.....	3rd & 4th yrs. with medicine & surgery	
Elective.....	4th year	
PHYSIOLOGY	180 hours	Years 2-3-4
Didactic & Laboratory.....	2nd year	
Clinical.....	3rd year with medicine	
Clinical.....	4th year on wards	
Elective.....	4th year	
PHARMACOLOGY	180 hours	Years 2-3-4
Laboratory.....	2nd year	
Therapeutics.....	3rd year (medicinal & nonmedicinal)	
Clinical.....	4th year (with medicine & on wards)	
Elective.....	4th year	

† Years of course in which subject is to be taught.

<b>BIOCHEMISTRY</b>	<b>144 hours</b>	<b>Years 1-2-3-4</b>
Didactic & Laboratory..	1st year	
Clinical.....	3rd year (with medicine & surgery)	
Clinical.....	4th year (on wards)	
Elective.....	4th year	
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<b>HYGIENE, SANITATION, PUBLIC HEALTH</b>	<b>128 hours</b>	<b>Years 2-3</b>
Didactic & Laboratory	2nd year	
Field Work.....	3rd year	
Elective.....	4th year	
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<b>BACTERIOLOGY</b>	<b>130 hours</b>	<b>Years 2-3-4</b>
Didactic & Laboratory..	2nd year (including immunology)	
Clinical.....	3rd & 4th yrs. (with medicine & on wards)	
Elective.....	4th year	
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<b>PATHOLOGY</b>	<b>300 hours</b>	<b>Years 2-3-4</b>
Didactic and Laboratory.....	2nd yr.	
Clinico-Path. Conferences.....	3rd yr. (with med. & surg.)	
Parasitology.....	3rd yr.	
Clinical.....	4th yr. (on wards)	
Autopsies.....	3rd & 4th yrs. (on call)	
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<b>MEDICINE</b>	<b>750 hours</b>	<b>Years 1-2-3-4</b>
Lectures.....	1st yr.	
Physical Diagnosis.....	1st & 2nd yrs.	
Clinico-Path. Conferences.....	2nd yr.	
Didactic.....	3rd yr.	
Med. Jurisprudence (6 hrs.).....	3rd yr.	
Dermatology & Syphilology (38 hrs.)..	3rd yr. (class & disp.)	
History of Medicine (10 hrs.).....	3rd yr.	
Ethics & Med. Econom. (6 hrs.).....	3rd yr.	
Neuropsychiatry (84 hrs.).....	3rd yr. (class & disp.)	
Outpatient Dept.....	3rd yr.	
Clinical Clerk on Wards (6 wks.)....	4th yr.	
Elective.....	4th yr.	
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<b>PEDIATRICS</b>	<b>150 hours</b>	<b>Years 3-4</b>
Class Work.....	3rd yr.	
Outpatient Dept.....	3rd yr.	
Clinical Clerk on Wards (5 wks.)....	4th yr.	
Elective.....	4th yr.	

3-4	SURGERY	150 hours	Years 2-3-4
	Class Work.....	2nd & 3rd yrs. (including	
	Clinico-Path. Conference.....	3rd yr. [minor surgery)	
	Orthop. Surg. (15 hrs.).....	3rd yr. (disp. & wards)	
	Urology (30 hrs.).....	3rd yr.	
2-3	Roentgenology (15 hrs.).....	2nd yr.	
	Eye (30 hrs.).....	3rd yr.	
	Ear, Nose and Throat (30 hrs.)...	3rd yr.	
	Clinical Clerk on Wards (6 wks.)....	4th yr.	
	Elective.....	4th yr.	

3-4	OBSTETRICS	140 hours*	Years 3-4
ds)	Class work.....	3rd year	
	Outpatient (Prenatal) .....	3rd year	
	Maternity (in residence—4 wks.).....	4th year	
3-4	Elective .....	4th year	

\*Not including residence in maternity hospital or dispensary.

3-4	GYNECOLOGY	30 hours	Year 3
	Class and Dispensary.....	3rd year	

#### OUTPATIENT DEPARTMENT

3rd year; 34 weeks; 2 hrs. daily.

	MEDICINE	12 weeks	144 hours
	Dermatology .....	24 hrs.	
	Neuropsychiatry .....	24 hrs.	
	General Medicine .....	96 hrs.	

	PEDIATRICS	36 hours
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3-4	SURGERY	15 weeks	180 hours
	Orthop. Surgery .....	12 hrs.	
	Urology .....	24 hrs.	
	Eye .....	24 hrs.	
	Ear, Nose and Throat .....	24 hrs.	
	General Surgery.....	84 hrs.	



OBSTETRICS (Prenatal)	2 weeks	24 hours
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GYNECOLOGY	2 weeks	24 hours
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This curriculum is based on the curriculum adopted by the Association in 1923, hewing closely to the minimum total of hours,—3,600,—and allowing for a certain number of elective hours,—hours that are de facto required so far as time is concerned, but elective so far as subjects are concerned.

The reduction in the required hours is not made with the idea of asking for the teaching of only a skeleton course in any subject, that would be a serious error, but to encourage the elimination of parts that may well be omitted. Naturally, this will necessitate revamping courses of instruction, but conversation with men representing each and every course in the curriculum, leads to the positive conclusion that such revamping is not only possible but even desirable. In other words, it should and it can be done. Additional contact with each subject is provided for by extension of the teaching into subsequent years, association of science with clinical teaching, and the provision for applied teaching of science subjects in the wards or by the bedside. The student is given opportunity to read and, above all, to think, and by providing election he is given a chance to do additional work in any subject of his choice. Thus, in a measure, research is fostered and encouraged at a time when the student is best fitted to undertake it.

This privilege of election must be closely supervised so that the time will not be wasted. Having made his choice of subject, the student must first secure permission from the head of the department concerned to take this work; his fitness and competence are considered; then he is told what the nature of the work must be and what other subjects must be studied in connection with the subject of his choice. For instance, if pediatrics is chosen, the head of that department may outline a course that includes work in anatomy, physiology and biochemistry. If medicine is chosen, biochemistry, physiology and pharmacology may be regarded as minors to be associated with the major. If biochemistry is chosen, the head of the department may advise, as minors, physiology and medicine. The scheme is applicable to every subject in the curriculum. Thus, the elective work is made of real value and fittingly rounds out the student's work in the medical school.

The student should also be introduced early to the practical side of medicine,—if that term may be used. Early in the first year he should attend at least one exercise a week in which the practice of medicine in its relation to the sciences is stressed. He is made to feel that he is in touch with his life work, and not that before he can get this touch he must pass through a block system of teaching in basic sciences, his fitness being tested by passing examinations. Again, examinations are the bugaboo! Step by step he is led up to practical medicine through paths of science.

The proposed scheme provides that the fourth year be given over to clinical work, except for the outpatient service, which is done in the third year. Personally, I feel that this work had better be done in the fourth year, a plan now being worked out by a number of schools; but inasmuch as most schools are not yet prepared to participate in this plan of teaching, the curriculum proposed is laid out on the lines of teaching followed by the majority of schools. By placing students on the wards according to a sort of block plan, continuous service is assured, free from interruptions of class work or service in other departments. I do not believe in the block or concentration plan of teaching, except in this instance.

The present plan of a few hours per day on the wards is pedagogically unsound and wholly indefensible. It will be noted that throughout the scheme proposed, contact with the basic sciences is maintained. It also proposes that these sciences be given not only access to the wards by associated teaching with clinical subjects, but that a few beds be assigned to them which can be used for applied teaching within the science itself, in relation to but unassociated with clinical subjects.

Incidentally, the time to be allotted to the so-called specialties has been reduced to an absolute minimum, not with the thought of underestimating their importance, but, rather, to stress the fact that adequate training for special practice is greatly to be desired, in fact, is of paramount importance; therefore, it must be secured by post-graduate or graduate work, preferably the latter. Thus, the country will not be flooded by a host of half-baked specialists who are not specialists at all, nor, even, good general practitioners. Specialists will be those who have built a firm foundation in general medicine and then qualified themselves for the practice of a specialty by further preparation under the guidance of men competent to give such instruction.

I am of the opinion that this curriculum will do much to overcome the many objections that have been raised to curricula in gen-

eral and that it will provide men who will be well prepared for the practice of medicine; who possess a foundation on which to build by further development, and who will be imbued with the necessity of continuing their education while they remain in practice. It will broaden and enhance the educational function of the medical school, continuing it into the future without time limitation, and furnish possibilities for development in any direction. It is adaptable to a two semester year or a three semester year or for continuous courses on the two semester or the quarter system plan. Personally, I prefer the continuous plan. To my mind, the long vacation periods are a bad feature of the present plan, considered only from the pedagogic side. My plan provides for a week of surcease from study between the first and second semesters and two weeks between the second and third, the third, of course, being the first semester of the second year on the present plan.

Many other factors might be discussed in connection with medical education and medical teaching in their bearing on the proposed curriculum, but I wish at this time only to present the plan and to ask that it be considered and, if possible, given a trial. It is the result of many years of thought and observation, as well as discussion with teachers, all of whom endorsed it and promised cooperation if the school authorities decided to put it in force.

The plan is "on the lap of the Gods."

## ANNUAL MEETING

The thirty-eighth annual meeting of the Association will be held October 24, 25 and 26, 1927, in Montreal, Quebec, Canada. All those who are interested in medical education and teaching are cordially invited to attend the meeting and to participate in the discussions. The headquarters is the Mount Royal Hotel.

## PROGRAM

## MONDAY, 9:00 A. M.

*Teaching of Obstetrics.*

W. W. CHIPMAN, McGill University Faculty of Medicine.

*Teaching of Psychology in the Medical Course.*

E. A. BOTT, University of Toronto Faculty of Medicine.

*Teaching Anatomy.*

J. C. B. GRANT, University of Manitoba Faculty of Medicine.

*Some Aspects of a Graduate School of Medicine.*

WILLIAM D. CUTTER, New York Post Graduate Medical School.

*The Administrative Personnel of a Medical School.*

G. CANBY ROBINSON, Vanderbilt University School of Medicine.

*Further Report on Specialization in Medicine.*

H. G. WEISKOTTEN, Syracuse University College of Medicine.

*Discussion on Extramural Clinical Teaching.*

C. R. BARDEEN, University of Wisconsin Medical School.

HUGH CABOT, University of Michigan Medical School.

L. S. SCHMITT, University of California Medical School.

## MONDAY AFTERNOON

Visit to McGill University Medical School.

## TUESDAY, 9:00 A. M.

*Teaching of Medicine.*

J. W. MEAKINS, McGill University Faculty of Medicine.

*Teaching of Physical Diagnosis.*

DUNCAN GRAHAM, University of Toronto Faculty of Medicine.

*What to Teach and What to Skip.*

HILDING BERGLUND, University of Minnesota Medical School.

*Teaching of Internal Medicine Along Phylogenetic Lines.*

CHARLES P. EMERSON, Indiana University School of Medicine.

*Co-ordination and Strengthening Premedical Training as a Means of Improving a Candidate for Medicine.*

CLYDE BROOKS, University of Alabama School of Medicine.

*Further Report on Applicants for Matriculation to Medical Schools.*

BURTON D. MYERS, Indiana University School of Medicine.

## TUESDAY AFTERNOON

Visit to McGill University Medical School.

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## WEDNESDAY, 9:00 A. M.

*Demands on the Medical Practitioner in the South During a Period of One Year.*

C. C. BASS, Tulane University School of Medicine.

*Medical Education as It Strikes an Anatomist.*

H. VON W. SCHULTE, Creighton University School of Medicine.

*The Problem of Junior Medical Teaching.*

J. JAY KEEGAN, University of Nebraska College of Medicine.

*Place of Living Anatomy in Medical Schools.*

EBEN J. CAREY, Marquette University School of Medicine.

*An Experiment in the Teaching of the History of Medicine.*

J. M. H. ROWLAND, University of Maryland School of Medicine.

*An Experiment with the Curriculum.*

LAWRENCE H. BAKER, Johns Hopkins University School of Medicine.

*Further Report on Women in Medicine.*

MARTHA TRACY, Woman's Medical College of Philadelphia.

*Co-ordination of Medical Problems; Medical Education; Public Health; Hospital.*

CHARLES S. BUTLER, Commandant Naval Medical School.

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## EXECUTIVE SESSION

(Time to be announced)

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## INFORMATION

HOTEL HEADQUARTERS: Mount Royal Hotel.

All meetings will be held in the Medical Building of McGill University. It is planned not to hold any afternoon or evening program sessions. The inspection of the medical school of McGill University will be made Monday and Tuesday afternoons. Details will be announced at the Monday morning session. A "get together" meeting will be held Monday evening at a place to be announced later.

Dr. Paul Bartsch, chief of the division of molluscs of the Smithsonian Institution, Washington, D. C., will show an "underseas" film at such time as can be arranged for to best advantage, either on Monday or Tuesday evening.

The Waterman Pen Company has extended an invitation to the delegates to visit its factory in Montreal. Visitors will receive one of the well known Waterman fountain pens as a souvenir.

## SUMMARY OF ADMISSION REQUIREMENTS OF CLASS A MEDICAL SCHOOLS

### UNIVERSITY OF ALABAMA

Sixty semester hours: Biology, 8; chemistry (inorganic) 8, and (organic) 4; physics, 8; French or German, 6, and English, 6.

### UNIVERSITY OF ARKANSAS

Sixty semester hours: Chemistry, inorganic, 8 (including laboratory, 4); organic, 4; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English, 6.

### STANFORD UNIVERSITY

One hundred thirty-five quarter units (90 semester hours): Chemistry, general inorganic, 8 (laboratory, 4); quantitative, 5; and organic, 5; physics, 13; biology, 15; English, 9; French or German reading knowledge.

### UNIVERSITY OF CALIFORNIA

Three-year premedical curriculum of this University: English, American history and civics, mathematics, chemistry (inorganic and organic), biology (zoology), physics and French or German.

### COLLEGE OF MEDICAL EVANGELISTS

Sixty-four semester hours: Inorganic chemistry, 8; organic chemistry, 4; physics, 8; biology, 8; English composition and literature, 6, and French, German or Spanish, 6-12.

### UNIVERSITY OF COLORADO

Ninety term hours (sixty semester hours): Physics, 12; biology, 12 (zoology, 6 and laboratory, 6); French or German, 15; English, 9; one year high school Latin or equivalent; chemistry, general inorganic, 15; including laboratory, 6; organic, 7, including laboratory, 2.

### YALE UNIVERSITY

Ninety semester hours: General physics, laboratory physics or physical chemistry, inorganic chemistry, including qualitative analysis, organic chemistry, general biology and equivalent of two years of French or German. (These courses to be reasonably equivalent to those offered by Yale University.)

### GEORGE WASHINGTON UNIVERSITY

Sixty semester hours: Chemistry, general inorganic, 8, including laboratory, 4; organic, 4, including laboratory, 2; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English composition and literature, 6; modern foreign language, reading knowledge, preferably French or German.

### GEORGETOWN UNIVERSITY

Sixty semester hours: Chemistry, general inorganic, 10 (laboratory, 4); analytic, 4 (laboratory, 3); organic, 5 (laboratory, 2); biology, 8 (laboratory, 4); physics, 10; English, 6; modern language (French, German or Spanish) 7.

#### HOWARD UNIVERSITY

Sixty semester hours: Chemistry, general inorganic, 8 (laboratory, 4); organic, 4; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English, 8, and French or German, 6, or reading knowledge.

#### UNIVERSITY OF GEORGIA

Sixty semester hours: Chemistry, general inorganic, 8 (laboratory, 4); organic, 4 (laboratory, 2); physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English composition and literature, 6; reading knowledge of French and German advised.

#### EMORY UNIVERSITY

Sixty semester hours: Chemistry, general inorganic, 8 (laboratory, 4); organic, 4 (laboratory, 2); physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English composition and literature, 6; foreign language, 6-12 or reading knowledge, strongly urged.

#### NORTHWESTERN UNIVERSITY

Sixty-five semester hours: English, 6; biology, 10 (laboratory, 4), must include general biology or zoology and a course in vertebrate anatomy of at least 3; chemistry, 14 (including qualitative analysis and organic chemistry); physics, 8 (laboratory, 2); French or German, 6.

#### UNIVERSITY OF ILLINOIS

Sixty semester hours: Chemistry, 12, including organic, 4; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English, 6; German or French, 6 or reading knowledge, strongly urged.

#### LOYOLA UNIVERSITY

Sixty semester hours: Chemistry, general inorganic, 8 (laboratory, 4); organic, 4; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English composition and literature, 6; French or German, 6-12 or reading knowledge.

#### INDIANA UNIVERSITY

Sixty semester hours: Modern language, 10; English, 6; chemistry, 14, including organic, 4; physics, 8 (laboratory, 2); biology, 8.

#### UNIVERSITY OF IOWA

Sixty semester hours: French or German, 6; English, 6; physics, 8; chemistry, general inorganic, 8; organic, 4; biology, 8 (at least 4 must be in animal biology or general zoology).

#### UNIVERSITY OF KANSAS

Sixty semester hours: Chemistry, general and qualitative analysis, 10, and organic, 5; physics, 8; biology, 8, including comparative anatomy; English composition and literature, 6; modern language, 8 (French or German preferred).



## RUSH MEDICAL COLLEGE (University of Chicago)

Bachelor's degree: Equivalent of 10 majors (33½ semester hours) of work in natural and physical sciences, and reading knowledge of one modern language other than English (German or French preferred).

## UNIVERSITY OF LOUISVILLE

Sixty semester hours: Chemistry, general inorganic, 10, including laboratory, 4, and qualitative analysis, 2; organic, 5; biology, 8 (laboratory, 4)—this requirement may also be satisfied by 6 of collegiate biology if preceded by a year (one unit) of high school biology; physics, 8; English composition and literature, 6-8.

## TULANE UNIVERSITY

Sixty semester hours: Biology, 8; physics, 8; chemistry, 12; English, 6; and modern foreign language, 6.

## JOHNS HOPKINS UNIVERSITY

Collegiate degree: Biology, 12 (laboratory, 6); chemistry, inorganic, 16; organic, 8; physics, 10 (laboratory, 4); French and German, 12 each, or reading knowledge; Latin, grammar and four books of Caesar or equivalent.

## BOSTON UNIVERSITY

Sixty semester hours: Chemistry, general, 8 (laboratory, 4); organic, 4; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English composition and literature, 6; modern language, 6 (French, German or Spanish).

## HARVARD UNIVERSITY

Sixty semester hours: Knowledge of English required of candidates for a degree in approved college; reading knowledge of French or German; chemistry, inorganic, 8 (laboratory, 4); organic, 8 (laboratory, 4); physics, 8 (laboratory, 2); biology, 8 (laboratory, 4) including not less than 4 of zoology.

## UNIVERSITY OF MICHIGAN

Sixty semester hours: English, 6; chemistry, 12 (or 16, if high school chemistry is lacking), including laboratory, 6; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); French or German, 12-16 (at least one year's work must be taken in college in case required two years were taken in high school).

## DETROIT COLLEGE OF MEDICINE AND SURGERY

Sixty semester hours: Physics, 8; chemistry, 12 (including organic); modern foreign language, 12; biology, 8; English, 12.

## TUFTS COLLEGE

Sixty semester hours: General chemistry, 8 (laboratory, 4); organic, 4; physics, 8; biology, 8; and English literature and composition, 6.

## UNIVERSITY OF MARYLAND

Sixty semester hours: Chemistry, inorganic, 8 (laboratory, 4); organic, 4; physics, 8 (laboratory, 2); biology, 8 (laboratory, 4); English composition and literature, 6.

## UNIVERSITY OF MINNESOTA

Sixty semester hours: Rhetoric, 6; chemistry, 13 (including general, qualitative and quantitative analysis, and organic chemistry with laboratory work); physics, 8 (covering mechanics, sound, heat, light, electricity and magnetism with proper laboratory work); zoology, 8 (including laboratory); foreign language, sufficient high school or college training to insure reading knowledge of French or German medical literature.

## UNIVERSITY OF MISSISSIPPI

Sixty semester hours: Chemistry, inorganic, 8 (laboratory, 4); organic, 8 (laboratory, 4); physics, 8 (laboratory, 4); biology, 8 (laboratory, 4); English, 6; French or German, 6.

## UNIVERSITY OF MISSOURI

Sixty semester hours: German or French, 8; general zoology, 8; general physics, 8; chemistry, inorganic, 8; organic, 5; general bacteriology, 3.

## ST. LOUIS UNIVERSITY

Sixty semester hours: English, 6; chemistry, 12; biology, 8; physics, 8; foreign languages, 8.

## WASHINGTON UNIVERSITY

Ninety semester hours: English, 10; German or French, 10 (8 hours + 1 high school unit; 6 hours + 2 high school units; 4 hours + 3 high school units); chemistry, 15; general physics, 8, and biology, 8.

## UNIVERSITY OF NEBRASKA

Sixty-five semester hours: Chemistry, 13 (5 of which shall be organic); physics, 8; biology, 8; English, 6. Foreign language among subjects recommended for electives.

## CREIGHTON UNIVERSITY

Sixty semester hours: English, 6; biology, 8 (laboratory, 4); physics, 8 (laboratory, 2); chemistry, 12 (laboratory, 6).

## DARTMOUTH COLLEGE

Eighty-six semester hours: Chemistry, 18 (organic, 4); biology, 8; physics, 8 (laboratory, 4); psychology, 1 year; English, 2 years (1 of literature); foreign languages, 2 years (1 year of advanced German or French). Applicants must demonstrate ability to translate at sight easy Latin prose.

## COLUMBIA UNIVERSITY

Seventy-two points (Columbia College rating). Physics, 8; chemistry, inorganic, 6-10; qualitative or quantitative analysis, 4; organic, 4; biology, 6; English, 10; French or German, 12 to 14.

Note: Few students offering minimum requirements are accepted, usually not more than two or three each year.

## UNION UNIVERSITY (Albany Medical College)

Sixty semester hours: Chemistry, inorganic, 8; analytical, 4; organic, 4; biology, 8; physics, 8; English composition and literature, 6; and foreign languages, 12 (advisable).

## UNIVERSITY OF BUFFALO

Sixty semester hours: English, 6; French or German, reading knowledge; chemistry, inorganic, 8; organic, 4; physics, 8; biology, 8.

## LONG ISLAND COLLEGE HOSPITAL

Seventy-two semester hours: Chemistry, inorganic, and qualitative analysis,\* 8; organic, 6; physics, 8; zoology, 8; English, 10, and French or German, 6.

\*Preferential consideration will be given to applicants also offering quantitative analysis.

## SYRACUSE UNIVERSITY

Sixty semester hours: Chemistry, inorganic, 8; organic, 4; physics, 8; biology, 8; English composition and literature, 6; modern foreign language, 6-12.

## UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE

Seventy-two semester hours: Chemistry, inorganic, 8; organic, 4; physics, 8; biology, 8; English composition and literature, 6; foreign language (French, Italian, Spanish or German) reading knowledge.

## CORNELL UNIVERSITY

Bachelor's degree or equivalent: Physics, 8; chemistry, inorganic, 8; and organic, 4; biology (zoology), 6; English, 6; modern language, 6—French, German or Spanish; two additional semester hours of college credit in each of biology, English and modern language in which no introductory high school course was offered for admission to college.

## UNIVERSITY OF NORTH CAROLINA

Sixty semester hours: Chemistry, inorganic, 8; organic, 4; biology, 8; physics, 8; English, 6, and French or German, 6.

## WAKE FOREST COLLEGE

Sixty-five semester hours: English, 6; French or German, 6; biology, 16; chemistry, 21; physics, 10; mathematics, 6.

## UNIVERSITY OF NORTH DAKOTA

Sixty semester hours: English, 6; chemistry, 12-16; physics, 8; biology, 8 (at least 4 of zoology); French or German, 6 to 15.

## WESTERN RESERVE UNIVERSITY

Graduation from an approved college or scientific school granting the degree of A.B., B.S., Ph.B., Litt.B. or equivalent, following completion of course of at least three collegiate years, including: Chemistry, 12 (including organic, 4); physics, 8; biology, 8; (course of 3 hours in comparative vertebrate anatomy is strongly urged); German or French, 8 (1 high school unit may be counted as 2 semester hours, but there must be 6 collegiate, or reading knowledge); English, 6.

## OHIO STATE UNIVERSITY

Sixty semester hours: Chemistry, 16; physics, 10; biology, 10; English, 6; foreign language, 10-14.

## UNIVERSITY OF CINCINNATI

Sixty semester hours: Chemistry, inorganic, 8; analytical, 4; organic, 4; zoology or general biology, 8; general physics, 8; English, 6; language, 6 (French, German, Spanish or Italian); embryology, 4.

## UNIVERSITY OF OKLAHOMA

Sixty semester hours: Chemistry, general inorganic, 8; organic, 6; physics, 8; biology, 8; English literature and composition, 6. A reading knowledge of foreign language, preferably French or German, is strongly urged.

## UNIVERSITY OF OREGON

Ninety semester hours: Chemistry, 16 (including organic, 6); biology, 14; physics, 8; English, 6; French or German, 14 or reading knowledge.

## UNIVERSITY OF PENNSYLVANIA

Ninety semester hours: Chemistry, inorganic, 8; organic, 4; analytical, 6; physics, 8; zoology or general biology, 8; French or German, 6 (exclusive of elementary courses); English, 12.

## JEFFERSON MEDICAL COLLEGE

Sixty semester hours: Chemistry, inorganic, 8; organic, 4; biology, 8; physics, 8; English, 6.

## WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English, 6; French or German, 6.

## HAHNEMANN MEDICAL COLLEGE

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English literature and composition, 6.

## UNIVERSITY OF PITTSBURGH

Sixty semester hours: Chemistry, inorganic, 8; organic, 8; biology, 8; physics, 8; English composition and literature, 6.

## MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English composition and literature, 6. Reading knowledge of French or German is strongly urged.

## UNIVERSITY OF SOUTH DAKOTA

Sixty semester hours: English, 6; chemistry, 12; biology, 8; physics, 8; reading knowledge of French or German or 6-12.

## UNIVERSITY OF TENNESSEE

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English composition, 6; foreign language, 6.

# SUMMARY

Semester Hours	Degree	Biology	Physics	Chemistry			Quant. Anal.	English	French or German				Modern Language				Latin	Addtl Required
				Total	Inorg.	Org.			Required Hours	Reading Required	Knowledge Required	Used or Advised	Required Hours	Advised	Reading & Knowl. Fr. or Ger. Preferred	Accept. Ital., Span. Fr. and Ger.		
60		8	8	12	8	4		6	6									
60		8	8	12	8	4		6										
90		15	13	18	8	5	5	9			✓							
3 years ✓ <sup>1</sup>		✓	✓		✓	✓		✓	✓									Am. His.-Civica.-Mat.
64		8	8	12	8	4		6					6			✓		
90 ✓ <sup>2</sup>		12	12	22	15	7		9	15							✓	H.S.	
60		✓	✓		✓	✓			2 yrs.									
60		8	8	12	8	4		6					7		✓			
60		8	10	19	10	5	4	6										
60		8	8	12	8	4		8										
60		8	8	12	8	4		6						✓	✓	✓		
60		8	8	12	8	4		6						✓	✓	✓		
60		8	8	12	8	4		6										
65		10	8	14				6	6									
60		8	8	12	8	4		6	6									
60		8	8	12	8	4		6	6									
60		8	8	14	10	4		6					10					
60		8	8	12	8	4		6	6									
60		8	8	15	10	5		6						8		✓		
60	✓ <sup>3</sup>	8	8	15	10	5		6								✓		
60		8	8	12				6						6				
	✓	12	10	24	16	8			12 ca.	✓		✓					✓	✓ <sup>4</sup>
60		8	8	12	8	4		6	✓	✓				6				
60		8	8	12				6	12									
60		8	8	12	8	4		12						12				
60		8	8	12	8	4		6										
60		8	8	12	8	4												
60		8	8	13	✓	✓	✓	6			✓ <sup>5</sup>							
60		8	8	12	8	4		6	6									
60		8	8	13	8	5			8									
60		8	8	12	8	4		6						8				Gen. Bact. 3 hrs.
90		8	8	15				10	10									
65		8	8	13	8	5		6							✓			
60		8	8	12	8	4		6										
86		8	8	18	14	4		12	12								✓ <sup>7</sup>	Psych. 6 hrs.
72 ✓ <sup>8</sup>		6	8	14	6	4	4	10	12									
60		8	8	16	8	4	4	6						12				
60		8	8	12	8	4		6			✓							
72		8	8	14	8	6	10	6										
60		8	8	12	8	4		6										
72		8	8	12	8	4		6						✓ <sup>9</sup>		✓ <sup>10</sup>		
	✓✓ <sup>10</sup>	8	8	12	8	4		8						8		✓		
60		8	8	12	8	4		6	6									
65		16	10	21				6	6									Math. 6 hrs.
60		8	8	12				6	6									
	✓✓ <sup>11</sup>	8	8	12	8	4		6	6	✓								
60		10	10	16				6						10				
60		8	8	16	8	4	4	6						6		✓		Embryol 4 hrs.
60		8	8	14	8	6		6					✓					
90		14	8	16	8	6		6	14	✓								
90		8	8	18	8	4	6	12	6									
60		8	8	12	8	4	6											
60		8	8	12				6	6									
60		8	8	12				6										
60		8	8	16	8	8		6										
60		8		12				6				✓						
60		8	8	12				6	6	✓								
90		16	8	20				6	6 ca.	✓								Psych. 4 hrs.
60		8	8	12				6	6									
60		8	8	12				6						6				
60		8	8	14	8	6		6										
60		8	8	12				6										
90 ✓ <sup>12</sup>		✓	✓	✓	✓	✓	✓		✓								✓	
72		8	10	16				10	12									
65		8	8	14	8	6		6										
60		8	8	12				6										
64		8	8	12	8	4		6										
60		10	10	14	10	4		6						6		✓		Embryol 2 hrs.
64		8	8	12				6	6									

- Three year premedical curriculum of this University.
- Term hours = 60 semester hours.
- 33½ semester hours (10 majors) in natural and physical sciences required.
- Grammar and four books of Caesar or equivalent.
- Knowledge required of candidate for a degree.
- Sufficient high school or college training to insure reading knowledge.

- Ability to translate at sight easy latin prose.
- Points of Columbia College rating.
- Reading Knowledge.
- Or Equivalent.
- On completion of three years of college work.
- French and German both required—6 hours of each, or reading knowledge.
- Three years of regular college work in arts and sciences.

## VANDERBILT UNIVERSITY

Seniors in absentia who will receive the Bachelor's degree from their colleges after having completed successfully at least one year of work of the School of Medicine. Biology, 16; chemistry, 20 (course in physical chemistry of solution is urged); physics, 8; psychology, 4; English and composition, 6; French, 6 and German, 6, or reading knowledge.

## MEHARRY MEDICAL COLLEGE

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English composition and literature, 6; modern foreign language, 6-12.

## UNIVERSITY OF TEXAS

Sixty semester hours: English, 6; biology, 8; physics, 8; chemistry, inorganic, 8; organic, 6.

## BAYLOR UNIVERSITY

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English, 6.

## UNIVERSITY OF UTAH

Three years of regular college work in Arts and Sciences: English, chemistry (inorganic, organic and analytical); biology (botany and zoology, including comparative vertebrate anatomy), physics, Latin, and German or French.

## UNIVERSITY OF VERMONT

Seventy-two semester hours: English, 10; French or German, 12; chemistry, 16; biology, 8; physics, 10.

## UNIVERSITY OF VIRGINIA

Sixty semester hours: Chemistry, inorganic, 8; organic, 6; physics, 8; biology, 8; English composition and literature, 6.

## MEDICAL COLLEGE OF VIRGINIA

Sixty semester hours: Chemistry, 12; physics, 8; biology, 8; English composition and literature, 6.

## WEST VIRGINIA UNIVERSITY

Sixty-four semester hours: Chemistry, 12; physics, 8; biology, 8; English, 6.

## UNIVERSITY OF WISCONSIN

Sixty semester hours: English, 6; foreign language, 6; elementary Latin, if not taken in high school must be taken in college; chemistry, inorganic, 10; organic, 4-6; physics, 10; biology, 10; embryology, 2.

## MARQUETTE UNIVERSITY

Sixty-four semester hours: Chemistry, 12; physics, 8; biology, 8; English, 6; German or French, 6-12.

## JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

A new curriculum will be put in force by this school beginning with the Fall Term of 1927. The aim is to reduce the number of required hours and provide "free time". In the third and fourth years the classes are divided into quarters. The following schedule merely indicates the arrangement for one-quarter of the class. For instance, in the third year during the first quarter, Group A will study medicine; Group B, surgery; Group C, psychiatry and neurology, and Group D will be free for electives. In the second, third and fourth quarters the groups will be reversed.

No examinations will be given in individual courses but at the end of the second year, comprehensive examinations in the preclinical subjects and at the end of the fourth year comprehensive examinations in the clinical subjects must be taken. No numerical grades will be given, and the marks will be merely "passed" or "failed." It is expected that during the free time in the first two years the students will take numerous electives in preclinical subjects, and in the third and fourth years the free time will be devoted to electives in medicine, surgery, the specialties, or additional preclinical work depending on the preferences of the student.

The present system of faculty preceptors or advisors will be expanded so that the students can be guided.

	Total Required Hours	Per Cent	Assoc. Amer. Med. Colleges Per Cent
Anatomy .....	432	16.4	14 -18½
Physiology .....	160	6.1	4½- 6
Biochemistry .....	144	5.5	3½- 4½
Pathology and Bacteriology.....	376	14.2	10 -13
Pharmacology .....	56	2.1	4 - 5
Hygiene and Sanitation .....	8	0.3	3 - 4
Medicine (including Medical Specialties)....	940	35.7	20 -26½
Surgery (including Surgical Specialties)....	412	15.6	13 -17½
Obstetrics and Gynecology .....	108	4.1	4 - 5
Total .....	2,635	100.0	

## FIRST YEAR

	Originally (Based on 33 wks.)	Now (Based on 32 wks.)
Anatomy .....	374	264
Physiology .....	44 (275)	160
Histology-Neurology .....	220	168
Physiological Chemistry .....	165	144
Bacteriology .....	121	88
Pharmacology .....	— (88)	56



	Originally (Based on 33 wks.)	Now (Based on 32 wks.)
Psychobiology .....	11	16 (896)
Free time .....	352	360

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## SECOND YEAR

Pathology .....	363	288
Normal Physical Diagnosis .....	66	64
Abnormal Physical Diagnosis .....	33	64
Clinical Microscopy .....	66	96
Diagnostic Methods .....	—	32
Physiology .....	231	0
Pharmacology .....	88	0
Surgery .....	33	0
Laryngology .....	4	0
Psychiatry (Medical Psychology) .....	22	8
Medicine .....	66	0 (552)
Free time .....	315	704

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## THIRD YEAR

Obstetrics .....	115	92
Medicine (including Pediatrics) .....	368	256
Surgery .....	241	144
Gynecology .....	49	16
Neurology .....	81	40
Ophthalmology .....	16	12
Hygiene .....	11	12
Psychiatry .....	16	40
Medical Zoology .....	11	8 (620)
Free time .....	379	616

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## FOURTH YEAR

Medicine .....	439	312
Surgery .....	264	192
Surgical Pathology .....	0	16
Ophthalmology .....	50	48 (568)
Free time .....	544	680

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Total Required Hours.....	2,636
Total Free Time .....	2,360
Total .....	4,996

## 1927-1928—FIRST YEAR

	1ST QUARTER							2ND QUARTER							3RD QUARTER							4TH QUARTER						
	Oct. 3—Nov. 30							Dec. 1—Feb. 4							Feb. 6—Mar. 31							Apr. 1—May 31						
	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	
9-10	Anat.	Anat.	Anat.	Anat.	Anat.	Anat.		P.C.	Anat.	P.C.	Anat.	P.C.	Anat.		Phys.	Bact.	Phys.	Bact.	Phys.	Bact.		Free	Free	Free	Free	Free	Free	
10-11	"	"	"	"	"	"		"	"	"	"	"	"		"	"	"	"	"	"	"		"	"	"	"	"	
11-12	"	"	"	"	"	"		"	"	"	"	"	"		"	"	"	"	"	"	"		"	"	"	"	"	
12-1	"	"	"	"	"	"		lect.	Phys.	"	"	lect.	Phys.		"	"	"	"	lect.	Pharm	Pharm		lect.	Pharm	"	"	"	
2-3	H. N.	H. N.	H. N.	H. N.	H. N.	Free		"	H. N.	"	H. N.	Free	Free		"	Free	"	Psycho	Free	Free	"		Pharm	"	Pharm	"	"	
3-4	"	"	"	"	"	"		"	"	"	"	"	"		"	"	"	"	"	"	"		"	"	"	"	"	
4-5	"	"	"	"	"	"		"	"	"	"	"	"		"	"	"	"	Free	"	"		"	"	"	"	"	

All instruction, except for pharmacology is for the whole class.

In the fourth quarter, one-half of the class will have laboratory exercises in pharmacology on Tuesday and the other half on Thursday. The remainder of the time is free for elective work.

## SECOND YEAR

		1ST QUARTER							2ND QUARTER							3RD QUARTER							4TH QUARTER								
		Oct. 3—Nov. 30							Dec. 1—Feb. 4							Feb. 6—Mar. 31							Apr. 1—May 31								
		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
9-10	Free	Phys.	Free	Phys.	Free	Phys.	Free	Free	Norm	Free	Diag.	Free	Free	P.D.	P.D.	P.D.	P.D.	P.D.	P.D.	P.D.	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
10-11	Path.	"	Path.	"	Path.	"	Path.	Path.	P.D.	Path.	n'tic	Path.	P.D.	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class	Class
11-12	"	"	"	"	"	"	"	"	"	"	Meth	"	"	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
12-1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Med. Clin.	"	Med. Clin.	"	lect. Pharm	"	lect. Pharm	"	lect. Pharm	"	lect. Pharm	"	lect. Pharm	"	lect. Pharm	"	lect. Pharm
2-3	"	"	"	"	"	"	Free	"	Free	"	Free	"	Free	C. M.	C. M.	C. M.	Psych	C. M.	C. M.	Free	Phar.	Free	Phar.	Free	Phar.	Free	Phar.	Free	Phar.	Free	
3-4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
4-5	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"

All instruction, except for physical diagnosis in the third quarter, is for the whole class. The Groups A, B and C will each consist of one-third of the class. Each of these Groups (A, B and C) will study physical diagnosis for two days each week as scheduled and will have the remaining four days free for elective courses.

## THIRD YEAR

1ST QUARTER										2ND QUARTER										3RD QUARTER										4TH QUARTER									
Oct. 3—Nov. 30										Dec. 1—Feb. 4										Feb. 6—Mar. 31										Apr. 1—May 31									
Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.				
9-10	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.	Obs.				
10-11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
11-12	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
Neurology	Surg.	Psych.	Med.	Surg.	Med.	Thera-	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.	Surg.	Med.			
1	Clín.	lect.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.	Clín.				
2-3	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
3-4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
4-5	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				

During the 9 to 10 hour from Oct. 4 to Feb. 28, each student will have 3 conference hours and one ward hour weekly in Obstetrics, as well as one hour weekly in Gynecological examinations to Dec. 23. The exact schedule for this hour will be posted in the Women's Clinic.

elect the quarters in which they study these subjects. Medicine, Surgery and Neurology-Psychiatry will be offered in each of the four quarters. Students may select the quarters in which they study these subjects and the order in which they will be accepted in order of application. However, not more than 10 students will be admitted to Medicine in the third quarter. This schedule merely illustrates the program for one group.

The exercises scheduled from 12 to 1 P. M. for the first three quarters are given for the whole class.

## FOURTH YEAR

1ST QUARTER										2ND QUARTER										3RD QUARTER										4TH QUARTER									
Oct. 3—Nov. 30										Dec. 1—Feb. 4										Feb. 6—Mar. 31										Apr. 1—May 31									
Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.				
9-10	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
10-11	a	(including Pediatrics)	a	a	a	a	a	(including Orthopedics)	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a			
11-12	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a			
12-1	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a			
2-3	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a			
3-4	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a			
4-5	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a			

In the fourth year the required instruction in Medicine and Surgery will be offered in each of the four quarters. Students may elect the quarters in which they study these subjects but if more than 20 students choose Surgery or Medicine in any one quarter the names will be accepted in order of application. This schedule merely illustrates the program for one group. However, not more than 10 students will be admitted to Medicine in the third quarter. This schedule merely illustrates the program for one group.

During the fourth year each student is required to make a complete psychiatric examination of six patients.

## IMPORTANT CHANGES IN CURRICULUM AT UNIVERSITY OF NEBRASKA

The University of Nebraska College of Medicine at Omaha has instituted several changes in its curriculum which may be of interest to other colleges. The entire curriculum, particularly the last two years, has been revised, to reduce the total and didactic hours required to a point more nearly in accord with the recommendations of the Association of American Medical Colleges. The total attendance hours required for each year are as follows: freshman, 1,012; sophomore, 1,088; junior, 1,071; senior, 1,015. The junior didactic teaching has been reduced by substituting University Hospital clinical clerk work for textbook assignment and quizzes. A course in clinical pathology (not laboratory diagnostic methods) has been given for several years in the first semester of the junior year and serves as an introductory course to all branches of medicine and surgery. This course has no corollary in any other medical school and is to be made the subject of a paper to be read at the next meeting of the Association. Briefly, it consists of systemic and disease pathology, taught from the clinical viewpoint by post-mortem case analysis.

The junior students are assigned to hospital clinical clerk work instead of to the dispensary as formerly. There are several logical reasons for this change. The junior, who is lacking in general medical knowledge and training in case observation, first enters the hospital where he has plenty of time to study cases assigned and is working under better staff supervision. He learns history taking and the maintenance of case records in the most thorough manner, and his thorough study of each case gives him rapidly widening knowledge and background for senior dispensary service. Such case study also removes some of the curse of textbook study without objective. The student can follow the clinical leads of his cases in his study, and attain knowledge in the most effective manner. The assignment of juniors to clinical clerk work has been in effect one semester and two results are outstanding. For the first time, junior students have volunteered the information that the junior year is interesting and satisfactory and the hospital interns have reported more satisfactory ward work than from the seniors.

The senior year has been almost completely recast by the reduction of total hours, the reduction of required didactic hours, the major assignment to the dispensary clinics, and the increase of electives. Nearly all special courses, excepting therapeutics and public health, are made elective, maintaining, however, a total hour requirement of electives of from 75 to 100 hours each semester. Certain regular elective courses are scheduled to permit fulfillment of this requirement without conflict, but almost any type of work may be substituted, as preceptor on clinical clerk work under one staff physician in office practice or private hospital, small group seminars under faculty members or special subject study in laboratories or with hospital records.

The assignment of only seniors to the dispensary in some degree already has improved this work which is notably lacking in American medical schools. Two years ago, junior students were withdrawn from the home or outcall service of the dispensary and since then the interest and satisfactory work of

which they study these subjects but if more than 20 students choose Surgery or Medicine in any one quarter the names will be accepted in order of application. This schedule merely illustrates the program for one group. During the medical quarter the pediatric instruction will consist of three periods of one hour each. During the surgical quarter the instruction in Ophthalmology will consist of two afternoon periods of two hours for each student. Pediatric and Ophthalmological schedules will be posted later. During the fourth year each student is required to make a complete psychiatric examination of six patients.

the seniors has developed the service until it is one of the largest and most valuable in the senior year. It is expected that the same stimulus will be given to the dispensary, both from the greater ability and responsibility of the senior students in the care of patients and from the more effective service of the staff physician when assisted by seniors.

These changes in the curriculum reduce the emphasis on required courses and text assignment and examination. The present schedule gives to the student greater freedom in the choice of work and it is hoped will stimulate greater initiative and study by the graduate method of following interesting leads from clinical problems. There will be two rather important checks, however, on the lazy or incompetent student. Each student will be required to maintain a brief card record of every clinical case which he has studied, or which he has observed in clinic and considers worthy of record. These records will be subject to call at any time for the purpose of check on work being done, for assignment of important diseases where deficiencies are noted, and will form the basis of a comprehensive committee examination before graduation. This comprehensive examination will be required of each student and will consist of three parts: 1. Presentation of case records. 2. General examination on subjects presented by these cases, both clinical and laboratory. 3. Practical examination by case assignment. Failure in this examination will require repetition of the senior year.

The reduction in didactic and required courses of the senior year has made possible the continuation of regular senior work during the summer months. By use of the entire summer, beginning May 30, 16 weeks, or one full semester's work, can be completed. Students are given the option of taking one or two weeks' summer vacation and making this up during the Christmas vacation. This places the senior work of the University of Nebraska College of Medicine on a trimester basis and permits those who choose to complete their medical college education and obtain their degrees in February instead of June. Twenty-eight students from the senior class of sixty-five have elected this continuous schedule this summer. The advantages are a saving in time, division of class and greater clinical opportunities, and eligibility for early intern appointments. Several students without means have borrowed money to hasten completion of their medical education where usually they have spent the summer months earning sufficient to carry them through the following year.

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#### LOUISIANA STATE MEDICAL SOCIETY

The following resolutions were adopted by the House of Delegates at the annual meeting of the society held in April, 1927:

##### REPORT OF COMMITTEE ON MEDICAL EDUCATION

As will be observed, your committee this year has been principally concerned with the medical curriculum, and begs therefore to make the following report:

Starting with the fundamental idea that medical education should have as its primary object the proper and efficient treatment of sick human beings, certain modifications in the curriculum strongly suggest themselves.

1. The present curriculum offers inadequate contact between the student and the patient. This applies particularly to the first three years of medical teaching, including the premedical year. During these three years, amounting to three-fifths of the entire educational period, the contact is practically nil. This idea has recently been stressed by Hugh Cabot before the Association of American Medical Colleges.

2. There are at present too many lectures in the curriculum. In this connection, your committee feels, as has been said, that "no one can teach the art or the science of the practice of medicine by the lecture system." Much of the time now spent by the student in the lecture room, might be spent to considerably more advantage either in the outdoor clinic or in the wards.

3. While your committee does not belittle the importance of laboratory teaching for the making of good, practical doctors, a disproportionate period of the student's time is spent in the laboratory. As stated by Ray Lyman Wilbur, of Stanford University, "It is interesting from a historical standpoint to note that when the laboratories came along, they were captured in an educational sense by clinical medicine, but they now have captured their captor."

4. The fact is often deplored by medical educators, that so many students want to be surgeons. Is not this an evidence, perhaps, that too much stress has been laid upon and too much time given up to major surgery?

Your committee feels, therefore, that the product of the medical school would be a better equipped practitioner if this excess of laboratory and lecture time were given over to the study, examination and treatment of patients, and if this excess of major surgical teaching were devoted to the same end.

Your committee deplores the apparent increasing control of medical education by endowments—those permanently established enormous sums which must be utilized for specific purposes exclusively. By thus fixing and determining the educational conduct of universities or medical schools, not only in a general but even in a detailed and specific manner, there is a tendency to overstandardization and stifling of individuality and personality in teaching. Your committee is in accord, therefore, with the note of warning recently sounded by Professor Zinsser of Harvard Medical School. This warning is timely and worthy of serious consideration, particularly on the part of those seeking assistance from philanthropic sources.

Finally, it is suggested that the teaching of the "Principles of Medical Ethics" be included in the curriculum as recommended by the Council on Medical Education of the American Medical Association.

The committee realizes that at best but little can be accomplished by these yearly reports, except, perhaps, to put the Society on record as being inter-

ested. However, something practically may be accomplished eventually by persistently sending these reports to the educational bodies actually controlling the medical curricula.

BE IT THEREFORE RESOLVED, That a copy of this and subsequent reports been sent to the following organizations:

The Association of American Medical Colleges; the deans of the component members; the Council on Education of the American Medical Association; the Rockefeller Foundation and the Carnegie Foundation.

Respectfully submitted,

COMMITTEE ON MEDICAL EDUCATION,  
MAURICE J. GELPI, Chairman,  
JOHN A. LANFORD,  
S. C. BARROW.

### THE LONG ISLAND COLLEGE HOSPITAL

A new reduced hours curriculum will go into force with the 1927-28 year. It is arranged to give students time to think and read. It is as follows:

ANATOMY	Hrs.	Hrs.
Gross .....	363	
Regional .....	44	
Histology .....	110	
Embryology .....	55	
Neuro-Anatomy .....	33	
		605
PHYSIOLOGY .....		220
PHARMACOLOGY .....	110	
Therapeutics .....	33	
		143
BIOCHEMISTRY .....	176	
Pharmacy .....	22	
		198
PATHOLOGY, exclusive of attendance at necropsies.....		220
BACTERIOLOGY .....		143
PREVENTIVE MEDICINE AND HYGIENE .....		132
MEDICINE, General—1st, 2nd, 3rd year.....	462	
Neurology—3rd year .....	30	
Dermatology—3rd year .....	24	
History of Medicine—3rd year .....	10	
Medical Jurisprudence—3rd year .....	6	
Ethics—3rd year .....	6	
Clinical Clerkship, 4th year, 8 weeks.....	?	

About 850



SURGERY, General—2nd and 3rd year .....	176	
Orthopedics—3rd year .....	12	
Urology—3rd year .....	24	
Ophthalmology—3rd year .....	24	
Otolaryngology—3rd year .....	24	
Clinical Clerkship, 4th year, 8 weeks.....	?	
		About 500
OBSTETRICS AND GYNECOLOGY—2nd and 3rd years.....	110	
Clinical Clerkships, 4th year, 4 weeks.....	?	
		About 200
PEDIATRICS—3rd year .....	33	
Clinical Clerkship, 4th year, 4 weeks.....	?	
		About 150
TOTAL REQUIRED HOURS (About).....		3360
ELECTIVES, 4th year, 10 weeks.....		300
		Total Hours 3660

First year: 836 hours. Second year: 891 hours. Third year: 901 hours. Fourth year: 1032 hours (about). The fourth year is wholly a clinical year, all didactic work being completed in the third year.

BULLETIN OF THE  
**Association of American  
 Medical Colleges**

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 25 East Washington Street  
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Address all communications to the Editor.

### THE MONTREAL MEETING

Elsewhere in this issue is published the program for the coming annual meeting. As is always the case, it is quite likely that changes in the program will be made at the time of the meeting, such as change of place of papers and in local arrangements. The sessions will be held in the Medical Building (not Anatomy Building as wrongly stated in the printed program—although it is the same building), and here facilities will be provided for making the delegates comfortable and afford opportunity to take care of their correspondence. As usual, the registration will be made during the actual time of meeting when all the delegates and visitors will be present.

The sessions will be convened promptly at 9:00 a. m. The program is fairly long, and it is desired that afternoon sessions be dispensed with to give opportunity to visit the Medical School, the new Women's Pavilion where obstetrics and gynecology are taught, the new In-

stitute of Pathology and many other buildings. It is planned to adjourn each session at 1:30 or, possibly, as late as 2:00 o'clock.

Luncheon will be served at the Royal Victoria Hospital on the first day. The Monday evening dinner will be given at the Mount Royal Hotel, and at this time, Dr. Paul Bartsch will show his under-seas films, an opportunity which should not be missed inasmuch it "will not knock twice" at the door. Then and then only can these pictures (in colors) be seen.

It is planned provisionally to have a dinner at the hotel on the evening of the second day, and immediately afterward go into executive session, thus making possible rather free discussion, a la round table conference. At the same time opportunity would be given to discuss informally what has been seen at the school and for a free talk on matters of general interest in education. Every effort will be made to dispense with formality.

Further details will be given at the time of meeting. The local Montreal committee is working hard to make this, the thirty-eighth, annual meeting the greatest in the history of the Association. They will have "to go some" but they can do it.

### STUDY OF TEACHING PERSONNEL

Attention is again directed to the study of the teaching personnel of medical schools that is being made under the direction of this Association. The cost of this study is being met by the Commission on Medical Education.

Circular letters and questionnaires have been mailed to more than 10,000

teachers in medical schools, and returns are coming in rapidly. May we ask those who have not yet made a return to do so as soon as possible so that a preliminary report on the study can be made to the Commission which will hold its annual meeting immediately after the closing of the Association meeting in Montreal?

A similar study has never been made of medical teaching personnel. All those who have been consulted are of the opinion that it is most desirable that such a study be made. It is impossible to forecast all the good features that will result from this study, but no doubt there will be many. In order to preserve confidential information, the circulars and questionnaires do not bear any mark of identification. It will not be possible to send a second request; therefore, only the answers received can be used for study—and in order that as many as possible be received, every one receiving the questionnaire is asked to return it promptly. A special stamped, addressed envelope was provided to insure return and delivery.

#### MEDICAL EDUCATION IN THE UNITED STATES

Each year, since 1900, the Council on Medical Education and Hospitals of the American Medical Association publishes an educational number in which are given statistics on medical education that constitute a comprehensive survey of the whole field. The data given are not only interesting, but are informative. A few of the many items presented this year (*THE JOURNAL*, Aug. 20, 1927) are the following:

##### NUMBER OF STUDENTS BY CLASSES

The total attendance for the first year was 6,009, or 256 more than last year

and 517 more than in 1925. The second year attendance was 4,993, or 214 more than last year and 578 more than in 1925. The third year attendance was 4,510, or 309 more than last year and 374 more than in 1925. The enrolment of the fourth year class was 4,150, or forty-three more than last year but seven less than in 1925.

##### NUMBER OF MEDICAL STUDENTS

The total number of medical students in the United States for the year ending June 30, 1927, excluding premedical, special and postgraduate students, was 19,662, an increase of 822 over last year. This is the largest enrolment of students since 1911. Of the total number of students last year, 18,835 were in the non-sectarian (regular) colleges, 539 at the two remaining homeopathic colleges, 248 at the two remaining eclectic colleges, and 40 at the one nondescript college.

##### NUMBER OF MEDICAL GRADUATES

The total number of graduates for the year ending June 30, 1927, was 4,035, or seventy-three more than last year. The number of graduates from the non-sectarian colleges this year was 3,864, or sixty-three more than last year. The number from the homeopathic colleges was ninety, or ten more than last year, and from the eclectic colleges there were sixty-seven, or three more than last year. The number of graduates from the nondescript or semi-osteopathic college was fourteen.

##### GRADUATES HOLDING DEGREES IN ARTS

Of the 4,035 medical graduates, 2,486 also obtained degrees in arts and sciences. This was ninety-eight more than last year. This year 61.5 per cent of all graduates held collegiate degrees, as compared with only 15.3 per cent of the graduates in 1910. Of the 3,864 non-

sectarian school graduates, 2,442, or 63.2 per cent, were reported to have baccalaureate degrees; of the ninety homeopathic graduates, forty, or 44.4 per cent, and of the sixty-seven eclectic graduates, four, or 6.0 per cent. Of the 2,486 graduates holding baccalaureate degrees, 339—the largest number—came from the Illinois medical colleges. Pennsylvania reported 270, New York reported 266, Massachusetts reported 173, and Ohio reported 110. All the better medical schools are now requiring two or more years of college work for admission, which brings more students in reach of the combined course for the B.S. and M.D. degrees.

#### LENGTH OF TERMS

Sessions of from thirty-three to thirty-seven weeks were reported by seventy, or 87.5 per cent, of all colleges. No college has less than a thirty-one weeks course.

#### QUALIFICATIONS OF STUDENTS AND GRADUATES

During the last thirteen years the number of students enrolled in class A colleges has increased from 11,122 to 18,754. Both the numbers and the percentages of students enrolled in class B and Class C colleges have decreased. The percentage of students in class B colleges dropped from 24.4 to 2.9, and in class C colleges from 10.2 to 1.7. Of graduates, also, the percentage in class A colleges has increased, while it has decreased in class B and class C colleges. Such reductions as there have been in the total numbers of students and graduates, therefore, have been at the expense of the lower grade colleges. Altogether 526 negro students were enrolled, of whom 129 were graduated.

#### TUITION FEES

Ten colleges charge fees of \$150 or less a year; twenty-eight charge from \$150 to \$250; thirty from \$250 to \$350; five charge from \$350 to \$400, and five colleges in New York City this year charge between \$500 and \$550. The average fee per student in all colleges was \$274. Of the ten colleges charging \$150 or less, nine are listed among class A (acceptable) colleges by the Council on Medical Education and Hospitals. Among these are the schools of medicine of several state universities for residents of those states. The four colleges listed by the Council in class C charge fees of \$150 to \$350 a year even though the diplomas from these colleges are reported as not recognized by from forty-seven to forty-nine licensing boards.

#### MEDICAL COLLEGE FINANCES

The actual expenses of conducting sixty-three of the existing medical colleges during the last session: For the sixty-three colleges, the total expenditure was \$11,308,800, or an average of \$179,504 each. Of the total sum, \$4,790,056 or 42.4 per cent, was expended for full-time teachers; \$679,158, or 6 per cent, was expended for part-time teachers; thus, a total of \$5,469,214, or 48.4 per cent, was paid for instruction.

The total income of the sixty-three schools was \$11,983,873, of which \$4,057,304, or 33.9 per cent, was from students' fees and \$5,359,500 came either from endowments or from municipal or state appropriation.

The sixty-three colleges included in the tabulations had a total enrolment of 16,042 students during the last session. The average amount received from student fees, therefore, was \$254. The

total expense incurred by these schools was \$11,308,800, or an average per student of \$704. The figures given are exclusive of money paid for the maintenance of hospitals. The expenditures for most of these schools include the

#### COEDUCATION IN MEDICAL SCHOOLS

Only eight medical schools in the United States and two in Canada are limited to men students. The Woman's Medical College of Pennsylvania is the only medical school that is entirely for women.

#### STATE REQUIREMENTS OF PRELIMINARY EDUCATION

There are now forty states (counting Alaska Ter.) which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number 39 now require the two year standard.

#### HOSPITAL INTERN YEAR

Required by Medical Colleges: Eleven medical colleges have adopted the requirements of a fifth year to be spent by the student as an intern in an approved hospital or in other acceptable clinical work before the M.D. degree will be granted. These colleges are: University of Minnesota Medical School, Stanford University School of Medicine, Rush Medical College (University of Chicago), University of California Medical School, Marquette University School of Medicine, Northwestern University Medical School, University of Illinois College of Medicine, Loyola University School of Medicine, Detroit College of Medicine and Surgery, University of Cincinnati College of Medicine, College of Medical Evangelists.

Required by Licensing Boards: The hospital intern year has been adopted as

an essential qualification for the license to practice in thirteen states: Pennsylvania, New Jersey, Alaska, Rhode Island, North Dakota, Washington, Illinois, Michigan, Delaware, South Dakota, Utah, Iowa and Wisconsin.

The requirements both by medical schools and by state boards are overwhelmingly if not unanimously for the rotation service in general hospitals.

#### SCHOLARSHIPS AND LOAN FUNDS

Forty-six medical schools have 543 scholarships; fifty-one have student loan funds.

#### RESULTS OF STATE BOARD LICENSING EXAMINATIONS

A review of results of the licensing examinations held by state boards during 1926\* is of extreme interest; first of all, because of the considerable decrease in the number of failures; second, because of the increase in the number of medical schools without any failure. Do these results imply that the quality of the teaching done in medical schools is better, or that state board examinations are less pedantic, or that methods of examination have improved? Each one may answer these queries to suit himself, but, true it is, that something has happened. There are those who are not willing to admit that the methods of examining are in all cases what they should be. That they do not test the applicant's knowledge—merely his memory; that the element of luck still prevails to a very large degree. However, be that as it may, an analysis of the published results shows that the 68 member medical schools granting degrees in 1926, had 5,190 graduates taking licens-

\*Jour. Am. Med. Assn., April 30, 1927.

sure examinations. Of this number, 231 failed, or 4.45 per cent.

Dividing these colleges into eleven groups on the basis of the percentage of failures—group 1; 18 colleges had 1,040 graduates examined with no failures. Group 2 (0.-0.9%), 3 colleges had 385 graduates examined with 3 failures, or 0.078% for the group. Group 3 (1.-1.9%), 11 colleges had 1,252 graduates examined with 18 failures, or 1.45% for the group. Group 4 (2.-2.9%), 9 colleges had 618 graduates examined with 14 failures, or 2.26% for the group. Group 5 (3.-3.9%), 4 colleges had 334 graduates examined with 11 failures, or 3.2% for the group. Group 6 (4.-4.9%), 6 colleges had 354 graduates examined with 15 failures, or 4.2% for the group. Group 7 (5.-5.9%), 2 colleges had 99 graduates examined with 5 failures, or 5.0% for the group. Group 8 (6.-6.9%), 2 colleges had 142 graduates examined with 9 failures, or 6.3% for the group. Group 9 (7.-9.9%), 4 colleges had 267 graduates with 23 failures, or 8.6% for the group. Group 10 (15.-20%), 1 college had 111 graduates examined with

8 failures, or 16.2%. Group 11 (20.-25%), 1 college had 83 graduates examined with 17 failures, or 20.5%. Eight colleges had more than 5%, but less than 10%, of failures. Only 2 colleges had more than 10% of failures.

Of 61 member colleges graduating physicians in 1926, 18 had no failures; 31 had less than 4.45 per cent failures, the percentage of failures for the 5190 graduates of all schools represented in these examinations. Two colleges had less than 5 per cent failures; 8 had less than 10 per cent; 1 had 16.2 per cent and one had 20.5 per cent. These 61 colleges had 4,685 graduates examined. Of this number, 133 failed, or 2.8 per cent for the entire group. Deducting the 766 examinees of the 12 colleges whose failure percentage was greater than the average total of 4.45 per cent, there remain 3,919 examinees with 58 failures, or 1.5 per cent. Inasmuch as 18 colleges with 1,040 examinees had no failures, the percentage of failures of the colleges that had failures,—that is, 2,879 examinees with 58 failures,—the actual failure percentage of the remaining 31 colleges was exactly 1.0 per cent!

## College News

**YALE SCHOOL OF MEDICINE**—Faculty appointments: John P. Peters and Raymond G. Hussey, promoted from associate professors of medicine and pathology, respectively, to professors; Howard W. Haggard, promoted from assistant professor to associate professor of applied physiology; Grover F. Powers, appointed professor of pediatrics; Thomas Francis, Jr., medicine; Francis B. Carter, obstetrics and gynecology; Sigurd C. Sandzen, surgery, and Robert Salinger, pediatrics.

The General Education Board pledged a gift of \$850,000 to Yale University School of Medicine on condition that a new endowment of \$1,150,000 is secured from other sources. The gift was made in the course of the campaign for \$20,000,000 being conducted for the university. Abraham Flexner, of the General Education Board, is reported to have said that the gift was offered in recognition of work done at Yale in research and teaching.

Dr. Wm. F. Verdi, professor of clinical medicine, gave \$10,000 for the establishment of a scholarship.

**WASHINGTON UNIVERSITY**—The General Education Board has given \$50,000 to the School of Medicine to assist in the work of the chest clinic under the directorship of Drs. Everts A. Graham and Jacob J. Singer.

The medical school had received a gift of \$500,000 to the endowment fund jointly from the General Education Board, New York, and Robert S. Brookings, president of the university corporation to reimburse the university for

expenditures on the affiliated Barnes and Children's hospitals. This gift from the General Education Board, the exact amount of which was not announced, makes the total gifts from the board to the medical school now about \$5,000,000. Other gifts to the school, which have been previously announced, include \$1,000,000 given by the General Education Board and Edward Mallinckrodt and his son for an institute of radiology; \$650,000 as endowment for work in obstetrics and pediatrics in connection with the new St. Louis Maternity Hospital; \$1,000,000 from the estate of the late Mrs. W. N. McMillan, St. Louis, for the McMillan Eye, Ear, Nose and Throat Hospital, and \$50,000 from the General Education Board for the development of work in surgery of the chest.

Drs. Arthur I. Kendall and S. W. Ransom have returned to Northwestern University Medical School.

The department of neuro-anatomy and histology has been reunited with the department of anatomy. Dr. R. J. Terry, professor of anatomy will be in charge.

**VANDERBILT UNIVERSITY**—Dr. Isaac A. Bigger, Jr., assistant professor of surgery and gynecology, University of Virginia, has accepted the associate professorship of surgery.

**STATE UNIVERSITY OF IOWA**—Dr. Emil Witschli, of the University of Basel, has been appointed professor of zoology. He will supervise graduate and undergraduate work in experimental embryology.

Dr. Samuel T. Orton, head of the department of psychiatry, has resigned.

The resignations of Dr. Don M. Griswold, head of the department of hygiene and preventive medicine, and of Dr. Wesley E. Gatewood, associate professor of



theory and practice of medicine; Dr. Lee W. Dean, dean of the college of medicine, and Chas. H. Rowan, professor of surgery, are also announced. Four members of the staff of anesthesiologists have also resigned.

**HARVARD UNIVERSITY**—Dr. William Phillips Graves, Boston, has been elected the first incumbent of the Baker chair of gynecology at the medical school. The chair was endowed by Dr. William Henry Baker of Boston, who died in 1914. Dr. Graves has been professor of gynecology since 1911.

Harvard has increased its tuition to \$400 a year, and coincidentally will provide a loan fund from which students who enter in that year or thereafter may borrow. Loans will be made to students in the second, third and fourth year classes, and occasionally to men in the second half of the first year, but in all cases to those whose records have been sufficiently creditable to make it probable that they will remain in the school. Beginning this year, all applicants for admission to the school living within 50 miles of Boston will be required to have a personal interview with the assistant dean or a member of the committee on admission.

During 1926-1927, the university received gifts of \$6,003,372. This includes \$100,000 for biological chemistry in the medical school; \$188,400 for the department of ophthalmology; \$237,081 for medical and surgical science; \$137,250 for the school of public health; \$100,000 for tropical medicine.

**NORTHWESTERN UNIVERSITY**—The entire collection of books and periodicals on surgery of the late Dr. Albert E. Halstead has been donated by his widow to Northwestern University Medical

School. They will be installed in a seminar room adjoining the Archibald Church Memorial Library and will be known as the "Albert Edward Halstead Surgical Library." Arthur I. Kendall, Ph.D., professor of bacteriology and public health at Washington University School of Medicine, St. Louis, has been appointed professor of bacteriology at Northwestern University Medical School. Dr. Kendall was formerly dean at Northwestern University Medical School. William T. Bovie, Ph.D., Medical School of Harvard University, Boston, has been appointed professor of biophysics at Northwestern; Dr. Fred C. Zapffe, Chicago, has been appointed supervisor of clinical clerks' instruction in affiliated teaching hospitals and the dispensary. Dr. Hamilton R. Fishback, Chicago, has been appointed professor of pathology; Dr. Harry B. Culver, assistant professor of urology; Goodwin L. Foster, Ph.D., University of California Medical School, assistant professor of biochemistry, and Dr. Stephen W. Ransom, professor of neuro-anatomy, Washington University School of Medicine, has been appointed to a similar position at Northwestern; Dr. Ransom was formerly professor of anatomy at Northwestern. The new buildings on the McKinlock Campus, East Chicago Avenue near the lake, were formally dedicated, June 13-17.

**WESTERN RESERVE**—Victor C. Myers, Ph.D., professor of biochemistry, State University of Iowa College of Medicine, has accepted the appointment as professor of biochemistry in Western Reserve University, Cleveland. Dr. Myers will be consulting biochemist to the university hospitals, and will supervise the work in biochemistry at the Cleveland City Hospital. He will have research facilities at the new Institute of Pathology. Dr. Clyde L. Cummer, associate

professor of clinical pathology since 1908, has resigned.

COLUMBIA UNIVERSITY—Dr. Alfred Owre, former dean of the College of Dentistry, University of Minnesota, to be dean of the school of dental and oral surgery and professor of dentistry at Columbia; Samuel R. Detwiler, Ph.D., of Harvard University, Boston, and Philip E. Smith, Ph.D., of Stanford University, Calif., to be professors of anatomy; Dr. George H. Ryder, to be clinical professor of obstetrics. The following were promoted to professorial grade: Dr. William E. Caldwell, clinical obstetrics and gynecology; Dr. Mortimer W. Raynor, from assistant professor to clinical professor of psychiatry; Dr. James A. Corscaden, promoted to assistant professor of clinical gynecology; Dr. Harbeck Halsted to assistant professor in clinical obstetrics and gynecology, and Dr. Royal C. Van Etten to assistant professor in clinical obstetrics and gynecology.

The John E. Bourne Chair of Medical and Surgical Research has been created, endowed for \$325,000. The Carnegie Corporation has given an additional \$100,000 for buildings and equipment. Thirty-three other gifts, including \$124,286, are announced.

The faculty and alumni of the College of Physicians and Surgeons are raising a fund of \$35,000 to obtain the collection of rare medical books that belonged to the late Dr. George S. Huntington, an alumnus of the medical school and for many years the professor of anatomy.

UNIVERSITY OF ARKANSAS—Dr. Morgan Smith resigned as dean of the school of medicine, and Dr. Frank Vinsonhaler, Little Rock, was appointed to that position. Dr. Vinsonhaler is pro-

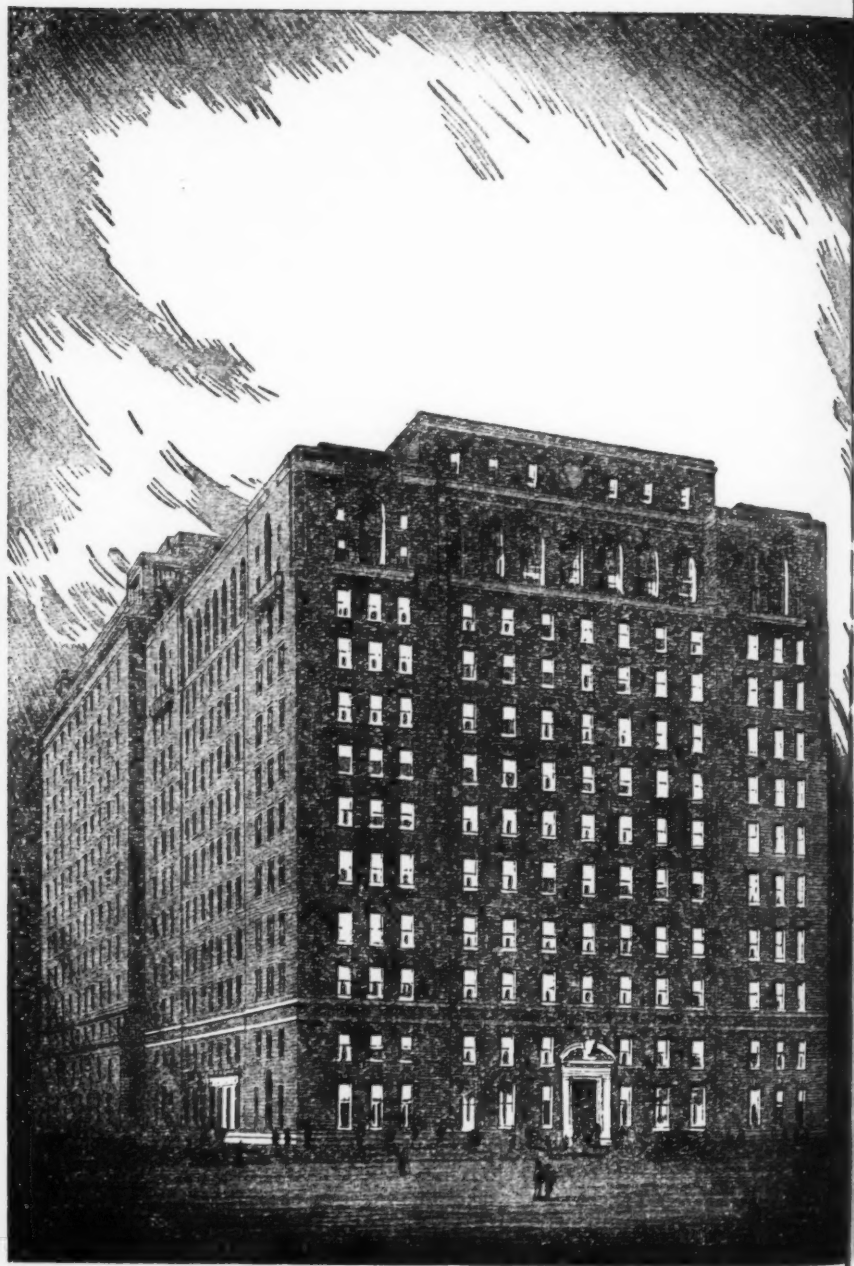
fessor of diseases of the eye, ear, nose and throat at the medical school, and a member of the American Board of Ophthalmology.

UNIVERSITY OF CHICAGO—Dr. Paul C. Hodges, associate professor of roentgenology, Peking Union Medical College, China, has been appointed professor of roentgenology in the department of medicine and roentgenologist to the university hospitals for thirteen months from June 1; Dr. Louis Bothman has been appointed part-time clinical instructor in ophthalmology in the department of surgery for two years; Dr. Elvin M. Hartlett has been appointed instructor in ophthalmology for sixteen months; Dr. Franklin C. McLean has been appointed chairman of the department of medicine for three years.

The Albert Billings Memorial hospital will be ready for occupancy this fall.

Subscriptions from 101 contributors for the clinic of internal medicine named in honor of Dr. Frank Billings in the new hospital building totaled nearly a quarter of a million dollars. An anonymous donor has placed in the hands of the president \$15,000 for gifts or loans to members of the University of Chicago, active or retired, in times of need. The university has the assurance of funds for an endowment of the department of obstetrics and gynecology in the new Chicago Lying-in Hospital to be erected at the university.

Since the establishment of the physiology department of the University of Chicago, 108 students have been granted masters' degree in physiology, in most cases only after the completion of a piece of research constituting actual contribution to knowledge and published in a scientific journal. Fifty-five students



THE NEW JEFFERSON COLLEGE BUILDING

have been granted the degree of doctor of philosophy (thirteen under the chairmanship of Professor Loeb, two under the chairmanship of Professor Stewart, and forty under the chairmanship of Professor Carlson); of these fifty-five doctors of philosophy, five are in the practice of medicine, four are professors of medicine; two professors of pharmacology, one a professor of biology, one a professor of milk production and one an instructor in English; several are professors and instructors in physiology in twenty-eight universities in the United States and Canada; one is in charge of a missionary hospital at Korea, one is in the Peking Union Medical College, China, and four are dead. Eleven of the graduates of this department are at present in the University of Chicago; one in the department of pharmacology, one in the department of surgery, four in the department of medicine and five in the department of physiology. A total of 607 papers and seven books had been published from the department up to June 30, 1926.

**JEFFERSON MEDICAL COLLEGE**—A drive conducted for \$1,500,000 for the erection of a new building on the north side of Walnut Street between the present college and Clifton Street, was successful. The present building at Tenth and Walnut Streets will be transformed into an outpatient department. Dr. Solomon Solis Cohen, for forty-three years a teacher in various capacities, has resigned the chair of professor of clinical medicine on account of his age. The departments of medicine and clinical medicine have been consolidated, Dr. Thomas McCrae remaining head of the department. Dr. Ross V. Patterson, the dean, will take over the clinical work formerly conducted by Dr. Cohen, who has been elected emeritus professor. Dr.

Frederick J. Kalteyer has been elected a professor of medicine, and Drs. Edward J. G. Beardsley and Elmer H. Funk, professors of clinical medicine. Dr. Jacob Earle Thomas, recently associate professor of physiology at St. Louis University School of Medicine, St. Louis, has been elected professor of physiology.

Dr. Fielding Wilkinson has been appointed assistant professor of otolaryngology; Dr. Bella Halper, assistant professor of pathology; Dr. Maud Slye, associate professor of pathology; Dr. Rollin T. Woodyatt, chairman of the department of medicine; Dr. Dudley B. Reed, director of the health service and professor in the department of hygiene and bacteriology; Dr. Frederick Tice, clinical professor in the department of medicine, Rush Medical College; Dr. Solomon Strouse, associate clinical professor in the department of medicine, Rush Medical College.

Dr. Homer F. Scott, of Fort Dodge, has been appointed assistant professor of surgery.

The personnel of the department of medicine for 1927-1928 is as follows: Franklin Chambers McLean, professor of medicine; Frank Billings, professor emeritus of medicine; Oswald H. Robertson, professor of medicine; Joseph Almarin Capps, clinical professor of medicine; Joseph Leggett Miller, clinical professor of medicine; Friedrich Hiller, associate professor of medicine; Paul C. Hodges, associate professor of roentgenology; Samuel William Becker, assistant professor of dermatology; Louis Leiter, assistant professor of medicine; Charles Phillip Miller, Jr., assistant professor of medicine; Walter L. Palmer, assistant professor of medi-

cine; Emmett Blackburn Bay, assistant clinical professor of medicine; Ruth E. Boynton, assistant clinical professor of medicine; L. Jean Bogert, instructor in medicine; Chester Scott Keefer, instructor in medicine and resident physician; Margarete Meta H. Kunde, instructor in medicine; Perry Y. Jackson, instructor in medicine; Robert G. Bloch, clinical instructor in medicine; Anne S. Bohning, assistant in medicine and assistant resident physician; John Murray Steele, assistant in medicine and assistant resident physician; Henry Nelson Harkins, research assistant in medicine; Albert L. Tanenbaum, research assistant in medicine.

The board of trustees announce the promotion to full professorship in pathology of William H. Taliaferro, Ph. D.; to associate professorship in pathology of Maude Slye, and to associate clinical professorships at Rush Medical College of Dr. Joseph L. Baer in obstetrics and gynecology, Dr. Edward A. Oliver in dermatology, and Dr. William G. Reeder in ophthalmology. John F. Norton, Ph.D., has been appointed secretary of the department of hygiene and bacteriology.

**NATIONAL BOARD OF MEDICAL EXAMINERS**—After considering a communication from the Committee on Education of the Section on Diseases of Children of the American Medical Association, it was decided that questions on pediatrics would be included in the future in written examinations in medicine of part II, and that an examination in pediatrics would be included in the practical and clinical examination of part III. There will be examinations, September 14-16, in parts I and II in all class A medical schools in the country where there are sufficient candidates. Appli-

cations for this examination should be made not later than August 10.

**UNIVERSITY OF MICHIGAN**—The new building of 700 beds, the old buildings converted into convalescent units with 300 beds, and the contagious unit with fifty beds, place the University Hospital among the large hospitals of the country. There are 2 miles of corridors and 10 acres of floor space. It is designed and equipped to care for the sick and to teach scientific medicine. The first floor is devoted entirely to clinics and clinical service; the south wing of the third floor is for living quarters for about sixty interns. The east and west wings of the sixth floor are to be used as wards for children. The seventh floor provides a roof garden and occupational therapy storage rooms. There are amphitheatres and auditoriums, lecture rooms, special laboratories, lounging rooms for visiting physicians and others for students; isolation units, dispensaries, shops and all the other accessories and equipment necessary to make the hospital a great center for the care of the sick and the teaching of medicine.

**TULANE UNIVERSITY MEDICAL SCHOOL**—The president of Tulane University announces that the General Education Board has appropriated \$150,000 to inaugurate a full-time organization in surgery in addition to the annual appropriation of the board of about \$35,000 for the school of medicine. Other donations announced were an anonymous gift of \$7,500 for the department of medicine and another anonymous gift of \$9,750 and \$15,000 from the General Education Board for the current expenses of the medical school.

**UNIVERSITY OF VIRGINIA**—The General Education Board has given an ad-

ditional gift of \$156,000 for the development of surgery, internal medicine, public health and hygiene to be available over a period of six years. The Board previously gave \$800,000 for the construction of new medical buildings. Dr. James C. Flippin was appointed dean of the department of medicine of the university, and took up his duties May 1; Dr. Stephen H. Watts has resigned as professor of surgery and gynecology.

UNIVERSITY OF PENNSYLVANIA—Dr. Charles C. Norris has been appointed professor of obstetrics and gynecology, and director of the combined department. Dr. Floyd E. Keene was appointed William Goodell professor of gynecology, and Dr. Edmund B. Piper professor of obstetrics. The late Dr. John G. Clark, gynecologist at the University of Pennsylvania School of Medicine, provided in his will for a bequest of \$50,000 to the gynecologic department of the university, and provided for the endowment of the department of gynecology at the university hospital. Dr. Clark further provided \$5,000 for the medical school of the university to be known as the "Undergraduate Medical School Fund," \$100 of the income to be devoted as an honorarium for an annual lecturer to address the undergraduate society and to be known as the "John G. Clark Lectureship."

UNIVERSITY OF UTAH—Dr. Leon H. Strong, formerly of the department of anatomy of the University of Indiana, has been appointed associate professor of anatomy.

JOHNS HOPKINS UNIVERSITY — Dr. Joseph C. Bloodgood, formerly associate professor of clinical surgery, has been appointed professor of clinical surgery

and Dr. William P. Baer, formerly associate professor of clinical orthopedic surgery, has been appointed professor of clinical orthopedic surgery.

The medical school will initiate a new 2600 required hours schedule with the fall session. This is in the nature of an educational experiment, one which has been approved by the Executive Council of this Association. This schedule is published elsewhere in this issue.

CARNEGIE FOUNDATION—A fund of \$90,000 has been appropriated by the Foundation for research in otosclerosis.

ST. LOUIS UNIVERSITY—Dr. David H. Dolley, professor of pathology since 1922, died last May. Dr. H. W. Loeb, dean, died in July.

GRADUATE SCHOOL OF MEDICINE UNIVERSITY OF PENNSYLVANIA—The first unit of the hospital to be devoted wholly to graduate teaching is now under construction and will be ready for occupancy by October. It contains 500 beds and will cost approximately \$1,500,000. Two additional units will be built later. Since the organization of this school in 1919, more than 1,200 physician students have been in attendance, more than half of these having chosen the so-called long courses. The degree M.M.Sc. (Master of Medical Science) has been conferred on 94 students; the D.M.Sc. on 6; Ph.D. on 7. Eight physicians have registered for a three years' course; 108 for a two years' course and 469 for a basic or one year's course. The clinical facilities of twenty-two hospitals are used for teaching.

The following appointments on the faculty have been announced: Dr. Bernard Mann, assistant professor of gynecology; Dr. William T. Johnson, associate professor of therapeutics; Walter



G. Karr, Ph.D., associate professor of biochemistry; Dr. Thomas M. McMillan, associate professor of cardiology; Dr. William D. Stroud, associate professor of cardiology; Dr. Nathaniel W. Winkelman, associate professor of neuropathology; Dr. Basil R. Beltram, assistant professor of surgery; Dr. William N. Bradley, assistant professor of pediatrics; Dr. Henry N. Diamond, assistant professor of otology; Dr. Jacob K. Jaffe, assistant professor of gynecology; Dr. Isidor J. Ravdin, assistant professor of surgical research; Dr. John F. Sinclair, assistant professor of pediatrics; Dr. Harry B. Wilmer, Jr., assistant professor of clinical allergy.

UNIVERSITY OF KANSAS—The legislature appropriated \$200,000 for an additional ward unit, and \$100,000 for a new nurses' home in Kansas City. A research fellowship of \$1,800 a year for the study of hypertension under the supervision of Dr. Ralph H. Major was recently given to the school of medicine by Eli Lilly and Company, Indianapolis.

MEDICAL COLLEGE OF VIRGINIA—The college will receive from the Martha Allen Wise estate as a residuary legatee about \$130,000 for the care and treatment of patients at the St. Philip Hospital, which is owned and operated by the college for the colored people and for teaching purposes. The following new appointments to the faculty are announced: William B. Porter, professor of medicine; Sidney S. Negus, professor of chemistry; J. C. Forbes, assistant professor of chemistry; Lewis C. Pusch, associate in pathology, and Jacob G. Jantz, associate in anatomy.

CORNELL UNIVERSITY MEDICAL COLLEGE—A fellowship in the chemotherapy of

cancer will be established under the terms of a gift of \$5,000 a year for five years made by L. N. Littauer of Gloversville, N. Y.

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE—Postgraduate courses will be offered, beginning with the 1927-1928 scholastic year which opens September 27. The courses will cover fourteen weeks' work, it is said, and registration will be limited to twelve in each course. The courses to be given this fall will be in otolaryngology, ophthalmology, roentgenology, pulmonary tuberculosis, diseases primarily affecting the blood, and orthopedic surgery; from January 25 to May 24, the postgraduate courses will be in diseases of the chest, diseases of the heart and circulation, gastroenterology, gynecology, obstetrics, pediatrics, dermatology and syphilology, and urology.

INCOME FROM DEWEY ESTATE GOES TO MEDICAL SCHOOLS—The will of the late Dr. Charles A. Dewey showed, when probated, July 12, according to the *New York Times*, that the estate of nearly \$1,000,000 is to be held intact as the Charles A. Dewey Fund, and that the income will go for the support of the medical schools of the University of Rochester and of Harvard University. Dr. Dewey graduated from the University of Rochester, and from the Medical School of Harvard University in 1880. In addition to the foregoing provision, which became effective through the recent deaths of a nephew and niece, the will provides a gift of \$100,000 to the Rochester General Hospital as a memorial to Dr. Dewey's sister.

UNIVERSITY OF PENNSYLVANIA—The late Dr. Milton B. Hartzell bequeathed \$100,000 to establish the Milton Bixler



Hartzell professorship of therapeutics. Fellowships in neuropsychiatry established by the Commonwealth Fund in the graduate school of medicine were awarded to Drs. Bernard J. Alpers, Philadelphia; Forrest N. Anderson, Lawrence, Kan.; William George Ferguson, Ann Arbor, Mich.; Alberta L. Jenkins, Philadelphia; Paul E. Kubitschek, Philadelphia; Norvelle C. Lamar, Philadelphia; Gerald H. J. Pearson, Ottawa, Ont., and Raymond W. Waggoner, Philadelphia. The following fellowships were also awarded: Frederick W. Sunderman, Robert M. Given fellowships in research medicine; John R. Paul, Robert Robinson Porter fellowships in research medicine; Thomas G. Miller, Henrietta Heckscher memorial fellowship in medical research; William Blair Mosser, Bennett fellowship in surgery; Verne G. Burden, F. M. Kirby fellowship in surgical physiology; Selling Brill, Hunter fellowship in surgery; Lewis Kraemer Ferguson, Agnew fellowship in surgery; Richard A. Kern, Lewis Godey fellowship in medicine, and Edward J. Ryan, J. William White fellowship in urology.

**ALBANY MEDICAL COLLEGE**—During the fifty-fourth annual meeting of the Association of the Alumni of the Albany Medical College, Albany, June 1, the Dr. Willis G. MacDonald Memorial was unveiled. Dr. MacDonald was formerly professor of abdominal and clinical surgery at Albany Medical College, and shortly after his death a fund of about \$18,000 to construct a physiologic laboratory in the college was raised. The fund, however, not being sufficient to build the laboratory, was turned over to the college, and a part of the new building which was dedicated, June 13, is to be known as the MacDonald Memorial.

**COMMONWEALTH FUND FELLOWSHIPS**—Twenty-three honor graduates of British universities have been awarded fellowships amounting to \$125,000 to enable them to come to the United States this fall for two years study in American universities. One man from the University of Edinburgh will go to Harvard to study bacteriology, and one man from the University of Bristol will go to Johns Hopkins to study bacteriology.

**ROCKEFELLER FOUNDATION**—Three new members of the Board of Trustees were elected recently: Herbert S. Hadley, chancellor of Washington University; David L. Edsall, dean of the medical school of Harvard University, and George H. Whipple, dean of the school of medicine and surgery, University of Rochester. The Rockefeller Foundation will provide the National Research Council \$50,000 a year for five years, beginning Jan. 1, 1928, to establish a new series of fellowships in the medical sciences. The fellowships are to be reorganized on the basis of training in research rather than, as heretofore, for training in teaching as well as in research. Consequently, special emphasis will now be placed on the fitness and interest for research of candidates for appointment as fellows.

**WOMAN'S MEDICAL COLLEGE**—Dr. Mollie A. Geiss is promoted to be assistant professor of materia medica and pharmacology; Dr. Helene C. Wilson is appointed associate in pharmacology; Walter Scott of the department of physiology of the University of Pennsylvania, has been appointed associate in physiology and pharmacology.

**UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL**—The National Research Coun-

cil has awarded a grant of \$15,880 to the University to support investigations being made by Dr. Herbert M. Evans, department of anatomy, with particular reference to the relation of nutrition to fertility and the relation of the endocrine glands. Dr. Robert Langley Porter, clinical professor of pediatrics, has been appointed dean of the medical school. Dr. Samuel S. Maxwell, professor of physiology, retired Aug. 4, 1927, and was appointed emeritus professor of physiology. Dr. James M. D. Olmsted has been appointed professor of physiology. Dr. Ian MacLaren Thompson has been appointed associate professor of anatomy. Other appointments: William B. Faulkner, M. D., instructor in surgery; George C. Hensel, A. B., M. D., instructor of orthopedic surgery; Harry M. Kanner, M. D., instructor in obstetrics and gynecology; Raymund J. Millzner, A. B., M. A., M. D., instructor in surgery.

Promotions: William J. Kerr from associate professor of medicine to professor of medicine; Howard C. Naffziger from associate clinical professor of surgery to clinical professor of surgery; Edward S. Sundstroem from assistant professor of biochemistry to associate professor of biochemistry; Olga Bridgman from associate clinical professor of abnormal psychology to associate professor of psychology and pediatrics; Hans Lisser from assistant clinical professor of medicine to associate clinical professor of medicine; Richard W. Harvey from assistant clinical professor of neurology to associate clinical professor of neurology; Vaclav H. Podstata from assistant clinical professor of psychiatry to associate clinical professor of psychiatry; Edward W. Twitchell from assistant professor of neurology to associate clinical professor of neurology; Hiram E. Miller

from assistant clinical professor of dermatology to associate clinical professor of dermatology; Mary E. Botsford from assistant clinical professor of anesthesia to associate clinical professor of anesthesia; Howard E. Ruggles from assistant clinical professor of roentgenology to associate clinical professor of roentgenology; Irwin C. Schumacher from instructor in medicine to assistant professor of medicine; Alfred H. Washburn from instructor in pediatrics to assistant professor of pediatrics; Eva C. Reid from instructor in psychiatry to assistant clinical professor of psychiatry; Laurence Taussig from instructor in dermatology to assistant clinical professor of dermatology; Montague S. Woolf from instructor in surgery to assistant clinical professor of surgery; Herbert S. Thomson from instructor in surgery to assistant clinical professor of surgery; Mary Kavanagh from instructor in anesthesia to assistant clinical professor of anesthesia; A. J. Salle from assistant in bacteriology to instructor in bacteriology; Stacy R. Mettier from assistant in pathology to instructor in pathology; Thomas H. McGavack from assistant in homeopathic materia medica to instructor in homeopathic materia medica; Ottiwell W. Jones, Jr., from assistant in surgery to instructor in surgery; Stanley H. Mentzer from assistant in surgery to instructor in surgery; John C. W. Taylor from assistant in otorhinolaryngology to instructor in otorhinolaryngology; Ernst Wolff from assistant in pediatrics to instructor in pediatrics.

Resignations: Goodwin L. Foster, assistant professor in biochemistry; Guy W. Clark, assistant professor of pharmacology; Lovell Langstroth, assistant clinical professor of medicine; Harry I. Wiel, instructor in medicine.

**INDIANA UNIVERSITY SCHOOL OF MEDICINE**—The William H. Coleman Hospital for Women will be opened in October for patients from all parts of the state either as charitable, part-pay or pay patients. The hospital, donated by Mr. and Mrs. William H. Coleman in memory of their daughter, will cost \$350,000 and accommodate seventy-five patients mostly in private rooms. A state appropriation of \$75,000 a year will be available for maintenance. The medical school unit under construction was started in 1917 but not finished on account of the World War. Funds to complete the structure have been provided by the sale of the old medical school building to the state for \$100,000. The legislature has appropriated \$50,000 for equipment. There will be an auditorium seating 500, additional classrooms and laboratories and room to expand the library, for which the last legislature appropriated \$20,000 a year for two years for new books. The medical building can accommodate 100 students in each of the three classes, the first year continuing to be taught at Bloomington. The enrollment at the medical school at Indianapolis is about 280. The third building to be erected is a \$500,000 nurses' home and training school, a gift of the Ball Brothers of Muncie, to be constructed soon, a little northwest of the Coleman Hospital and southwest of the Riley Hospital. It will be fireproof of English Georgian architecture, and connected by tunnel with other medical units, and will accommodate 165 nurses.

**UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE**—Dr. Isaac Levin was appointed clinical professor of cancer research, and Dr. Walter J. Highman, clinical professor of dermatology and syphilology. Dr. George A. Koenig was

promoted to clinical professor of surgery; Dr. Clement J. Halperin to clinical professor of dermatology and syphilology, and Gustave J. Noback, Ph.D., to associate professor of anatomy.

**UNIVERSITY OF MINNESOTA**—The Minnesota Legislature recently appropriated \$25,000 a year to the medical school for research work. All students at the University of Minnesota will be given free medical examinations beginning in the fall.

**NEW YORK POST-GRADUATE MEDICAL SCHOOL**—Dr. Edward H. Hume, recently of the Yale-in-China school, has been asked to make a comprehensive survey of this school for the purpose of outlining its teaching possibilities with its present financial resources. The school announces that its dermatologic clinic has been reorganized and equipped to teach all branches of dermatology and syphilology; it occupies eighteen rooms, and has facilities for the recent advances in diagnosis and treatment. Dr. George M. MacKee is director of the department, and there is a staff of forty members, twenty-one clinical assistants and ten technicians. Many members will be constantly engaged in research work.

**MEHARRY MEDICAL COLLEGE**—The Board of Regents of the University of the State of New York has accorded full recognition to the college and placed it on the registered list.

**CLEVELAND'S MEDICAL CENTER ASSURED**—The campaign to raise \$6,000,000 for the medical center in Cleveland ended May 20 with contributions of \$6,534,355. Additional gifts for projects not included in the campaign brought the total contributions up to more than \$8,000,000, it is reported. Among the large

gifts was that of \$1,000,000 by Edward S. Harkness, New York.

**UNIVERSITY OF WISCONSIN**—The library of the late Frederick Belding Power, first head of the course in pharmacy, has been given to the university by his daughter.

A two-year program of medical extension work at the University of Wisconsin, has been announced following a joint meeting of representatives of the state medical society, the state medical school and the extension division of the University of Wisconsin. The program has four fields of effort: (1) medical literature and case report service for individual physicians; (2) lectures for county medical societies, the programs to be supplied without expense; (3) postgraduate courses at the university; (4) special lecture-clinical groups. About \$18,000 will be expended on this work.

Dr. Ernest A. Pohle, assistant professor of radiology, University of Michigan Medical School, Ann Arbor, has been appointed professor of radiology. Dr. Pohle graduated from the University of Frankfurt-on-the-Main. Edward Witze-mann, Mayo Clinic, Rochester, Minn., has been appointed professor of physiologic chemistry. The new buildings for the medical school are well under way. It is expected that they will be ready for occupancy by the fall term of 1927. Dr. Chauncey D. Leake, associate professor of pharmacology, has accepted the professorship of pharmacology in the University of California Medical School.

**DARTMOUTH MEDICAL SCHOOL**—Dr. John P. Bowler has been appointed dean to succeed Dr. John M. Gile, who died in 1925. Dr. Bowler is a graduate of Dartmouth College and the Medical

School of Harvard University. In 1925 he received the degree of M.Sc. in surgery from the University of Minnesota.

**DUKE UNIVERSITY SCHOOL OF MEDICINE**—It is planned to limit classes to fifty, and arrange the curriculum so that, with proper preparatory education, the course leading to a degree in medicine should be completed in three years. The teaching and hospital staff will be full-time instructors, amply compensated for their services. Construction will begin soon on a 350 bed hospital, and the school of medicine is expected to open in 1929. A number of physicians are now under observation by the board of trustees for positions on the faculty.

**UNIVERSITY OF GEORGIA**—Almost the entire south wing of the medical school at Augusta was destroyed by fire several months ago.

The damage was estimated at \$16,000. Space in the south wing, heretofore unused, is being converted into quarters for the department of experimental surgery with a large operating room, three rooms for research and an office. The space formerly used by the surgical department on the first floor will be taken over by the department of public health. The medical department has applied to the legislature for an increased appropriation of \$20,000 a year for maintenance to replace a similar amount that has been received for the last five years from the Carnegie and Rockefeller Foundations, which contract has expired. The public spirited citizens of the community and "official Augusta" contributed a similar amount to that given by the foundations, and these funds were used chiefly to inaugurate full-time departments in medicine, surgery and obstetrics.

The class of 1927 has established a loan fund for needy students by turning back to the school the unused portion of money deposited as "breakage fees." The fund will be added to yearly until fifteen graduating classes have contributed to the fund, when the student council or faculty committee may apply further deposits to the advancement and expansion of the medical department. Former graduates shall be given the privilege of contributing to the fund as well as other persons.

DE LAMAR INSTITUTE OF PUBLIC HEALTH, COLUMBIA UNIVERSITY—Dr. Durward R. Jones, recently epidemiologist of State Department of Health of South Dakota, succeeds Dr. Alton S. Pope as assistant professor of epidemiology. Dr. Adelaide Ross Smith, recently physician to the New York State Industrial Board, succeeds Assistant Professor Frank G. Pedley as associate professor of medicine in industrial hygiene. Dr. Smith will be in charge of the Industrial Department at the Vanderbilt Clinic of the College of Physicians and Surgeons. Dr. Pope is now epidemiologist of the Chicago Health Department. Dr. Pedley will assume charge of the new department of industrial medicine at McGill University Medical School on August 1.

PHYSICIANS IN SOUTH CAROLINA—The journal of the state medical society notes that the tenth edition of the American Medical Directory lists 1,309 physicians in South Carolina among an estimated population of 1,845,000. In 1913, there were 1,433 physicians and an estimated population of 1,607,745.

UNIVERSITY OF MARYLAND—Mr. Isaac E. Emerson, Baltimore, has provided an endowment for a fellowship in the school of medicine. The state has appropri-

ated almost \$1,000,000 for new buildings and improvements.

NEW YORK UNIVERSITY—Dr. Eric Ponder, of Edinburgh, has been appointed associate professor of general physiology.

MCGILL UNIVERSITY—Dr. N. B. Dreyer, assistant professor of physiology, Dalhousie University, has accepted an appointment in the department of pharmacology.

TUFTS COLLEGE MEDICAL SCHOOL—Dr. Albert Warren Stearns has been appointed dean to succeed Dr. Stephen Rushmore, who resigned recently.

COLUMBIA UNIVERSITY—The late Dr. Henry Koplik bequeathed \$15,000 to the medical school for the establishment of a scholarship in pediatrics.

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE—Dr. J. H. J. Upham has been appointed acting dean to succeed Dr. E. F. McCampbell who resigned July 1.

TULANE UNIVERSITY SCHOOL OF MEDICINE—The policy of full-time teachers, inaugurated a short time ago in the department of medicine, has been extended recently to the department of surgery, and funds are now being sought to place the department of obstetrics on a full-time basis. The General Education Board has appropriated \$150,000 to the university for its full-time organization in surgery, payable in five annual installments of \$30,000 each, the first one to be available this fall. The General Education Board donated \$15,000 to the department of medicine at the last session of the school, this being the first installment of an appropriation of \$75,000 to that department.

NEW SCHOOL OF PATHOLOGY AT OXFORD—Ceremonies were held, March 11,

to open the Sir William Dunn School of Pathology at Oxford University, England. Sir Archibald Garrod; Sir Charles S. Sherrington; Sir Humphrey D. Rolleston; Sir Frederick Andrewes; Sir Frederick G. Hopkins; Sir Walter M. Fletcher, secretary, medical research council; Dr. Andrew Balfour, director, London School of Hygiene and Tropical Medicine; Professors Moellgaard and Holst, representing the Scandinavian universities, and Lady Osler were present. The new school, erected at a cost of about £100,000, is under the direction of Prof. Georges Dreyer, who has held the chair of pathology of Oxford for many years. It has three floors and a basement; the west wing is for class rooms, library and a museum, and the east wing is for research.

**SÃO PAULO UNIVERSITY, BRAZIL**—The Rockefeller Foundation will give \$650,000 toward the construction of a new \$1,500,000 building for the faculty of medicine at São Paulo. As a condition of the donation, the state government has agreed to construct hospitals in connection with the new medical school. The department of the interior of the state at São Paulo has received also from the Rockefeller Foundation \$50,000 as the first installment of a gift with which to construct an institute of hygiene.

**LONDON UNIVERSITY**—The University of London has acquired a new eleven acre site just north of the British Museum in Bloomsbury. Part of the funds necessary to make the purchase were provided by the Rockefeller Foundation.

**KEIO MEDICAL COLLEGE, JAPAN**—It has been announced that the Rockefeller Foundation will donate funds for the establishment of a chair of public hygiene.

The Kaiser Wilhelm Institute for the study of anthropology, hereditary transmission in man and eugenics, is nearing completion. Eugene Fischer, the anatomist, has been appointed director of the institute.

**UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL**—James Montrose Duncan Olmsted, Ph. D., has been appointed associate professor of physiology at the University of California, and will take up his work next year. Professor Olmsted was a Rhodes scholar at Oxford from 1908 to 1911, receiving his Ph. D. degree from Harvard in 1920. He was associate in physiology at the University of Illinois College of Medicine in 1920, and from there went to the University of Toronto as assistant professor.

**COLUMBIA UNIVERSITY**—Dr. George H. Kirby, director of the New York State Psychiatric Institute and professor of clinical medicine in the department of psychiatry at Cornell University Medical College, Ithaca, has been appointed professor of psychiatry at Columbia.

**JEFFERSON MEDICAL COLLEGE**—Dr. Ross V. Patterson, dean, has been elected to a full professorship in medicine. Dr. Charles E. G. Shannon has been elected professor of ophthalmology to fill the vacancy caused by the death of Dr. William M. Sweet. Dr. Frederick J. Katterer has been elected professor of medicine. Dr. Edward J. G. Beardsley and Dr. Elmer H. Funk have been elected clinical professors of medicine. Dr. Virgil H. Moon, head of the department of pathology, Indiana University School of Medicine, Indianapolis, has been appointed head of the department of pathology.

**WASHINGTON UNIVERSITY**—A new St. Louis Maternity Hospital has been erected adjoining Barnes Hospital and



the Washington University School of Medicine. This hospital is now affiliated with the university. It will still have an independent board of directors, but the medical supervision will be in the hands of the university. The new eight-story fireproof building will accommodate 103 mothers and an equal number of infants; sixty of these beds will be for teaching purposes, the remaining forty-three for private patients.

**HOWARD UNIVERSITY SCHOOL OF MEDICINE**—A \$500,000 three-story building is under construction west of the present medical building. It will accommodate about 300 more students than at present. Apparatus in the basement will filter, humidify, heat and distribute throughout the anatomic section of the building 18,000 cubic feet of air per minute. The building is planned to group horizontally and vertically the laboratories and lecture rooms of closely related subjects. Four stair towers will make it possible to reach any laboratory direct from the exterior of the building without going through any other laboratory, and to use any part of the structure while the remainder of the building is locked. On completion of the building, the present structure will be remodeled for the departments of dentistry and pharmacy. An appeal has been made to the public to assist Howard University School of Medicine in raising funds to complete a \$500,000 endowment fund, and a similar amount for the new building; of the latter amount, on April 17, only \$50,000 remained to be raised, while about \$88,000 was needed to complete the endowment fund. The general education board of the Rockefeller Foundation has promised \$250,000, provided a similar amount is raised by the school before July 1. Howard University School of Medicine and Meharry Medical College at Nashville,

Tenn., are the only negro medical colleges in the United States.

**UNIVERSITY OF OREGON MEDICAL SCHOOL**—The General Education Board recently allotted the school \$130,000 to be spent for equipment (\$63,000), salaries (\$57,000), library volumes (\$4,000) and traveling (\$6,000). The entire amount of the allotment is for purposes not provided by the state legislature.

A gift of a portable electrocardiograph machine has also been received by the department of medicine from Mrs. Charles F. Beebe in memory of the late General Charles Beebe. This will augment teaching at the Doernbecher Children's Hospital and the Portland Free Dispensary.

The Portland Academy of Medicine was recently favored by an address on the subject of "Insulin and Diabetes" by Professor J. R. MacLeod, from the Toronto University Faculty of Medicine.

H. J. Gerstenberg, professor of pediatrics at Western Reserve University School of Medicine, lectured at the Medical School on the subject of "Rickets."

A year's leave of absence has been granted Dr. Wilmont C. Foster, assistant professor of anatomy, University of Oregon Medical School, in order that he may continue work in surgical anatomy at the Mayo Clinic, Rochester, Minn.

Dr. Warren C. Hunter has just completed a Fellowship with the National Research Council in the department of pathology of the University of Michigan under Dr. A. S. Warthin.

**UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE**—The following new appointments are announced: Clement J. Halperin, clinical professor of dermatology and Syphilology; Walter J. Highman, clinical professor of dermatology and syphilology; George A. Koenig, clinical professor of surgery; Julius A.



Klosterman, assistant professor of immunology.

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE—Dr. Charles J. Rowan, head of the department of surgery, resigned. Dr. Rowan was formerly assistant professor of surgery at Rush Medical College, Chicago, and took up his work at the University of Iowa in 1914. Dr. Frank J. Rohner, assistant professor of theory and practice of medicine, also resigned.

Dr. Herbert M. Evans, of the department of anatomy, University of California Medical School, has been elected a member of the National Academy of Sciences.

The French government recently conferred the cross of officer of the Legion of Honor on Dr. Frank Billings, in recognition of his work in connection with the memorial to Pasteur to be erected in Chicago.

The John Scott bronze medal of the Franklin Institute of Philadelphia and \$1,000 in funds were awarded to Dr. Alfred F. Hess, clinical professor of children's diseases, University and Bellevue Hospital Medical College, for his studies on the "operative influence of light on rickets and on the remarkable effects produced by the ultraviolet irradiation not only of the living animal, but also on various foods, showing in the latter instance that the vitamin value in these substances could thus be increased."

Dr. L. B. Arey, professor and head of the department of anatomy, Northwestern University Medical School, was recently made the first incumbent of the newly created Robert Laughlin Rhea professorship of anatomy. Dr. Rhea was the first professor of anatomy and one of the founders of that school. The

endowment to support this chair was given by Mrs. Rhea.

Dr. A. C. Ivy, professor and head of the department of physiology at Northwestern University Medical School, was made the first Nathan Smith Davis professor of physiology. This chair was endowed by William Deering, a friend of Dr. Davis.

Dr. Wilmot C. Foster, assistant professor of anatomy, University of Oregon Medical School, has been granted a year's leave of absence to work in surgical anatomy at the Mayo Clinic, Rochester, Minn.

Dr. J. W. Churchman has been appointed professor of experimental therapeutics in Cornell University Medical College.

Dr. William L. Aycock, associate in preventive medicine and hygiene at Harvard Medical School, has gone to Kent, England, to study an outbreak of infantile paralysis in the schools of that town.

Dr. John J. Abel of Johns Hopkins University, department of pharmacology, was given the Willard Gibbs medal by the American Chemical Society.

Dr. J. Earl Thomas, associate professor of physiology in St. Louis University School of Medicine, has been elected professor of physiology at Jefferson Medical College.

The International Anesthesia Research Society presented to Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, a scroll of recognition in appreciation of "meritorious research in anesthesia and analgesia, and for prolonged, untiring and resultful experimental laboratory studies of the biochemistry and pharmacophysiology of ethylene, as well as such splendid co-operation of pure, with applied science, as enabled the surgeons, specialists and

anesthetists of the Presbyterian Hospital (Chicago) to rapidly establish the clinical use of ethylene as a new and valuable routine method of anesthesia for the benefit of suffering humanity."

The firemen of Philadelphia donated \$2,000 to the building fund of Jefferson Medical College in honor of Dr. John Chalmers Da Costa, professor of surgery, for gratuitous service as surgeon of the Firemen's Pension Fund for thirty-five years. The sheriff's office contributed a similar amount.

Dr. Stewart R. Roberts has been appointed in charge of the free heart clinic for white patients who are unable to pay at Wesley Memorial Hospital, Atlanta, under the auspices of Emory University School of Medicine.

Dr. John J. Abel, professor of pharmacology, Johns Hopkins University Medical School, was given a Sc.D., and George H. Whipple, dean and professor of pathology, School of Medicine and Dentistry, University of Rochester, received a M.Sc. from Yale University recently.

Dr. Dean D. Lewis, professor of surgery, Johns Hopkins University, received an honorary Sc.D. degree from the University of Wisconsin.

Dr. Alice Hamilton, assistant professor of industrial medicine, Harvard Medical School, received a Sc.D. degree from Smith College.

The University of Edinburgh conferred the honorary degree of LL.D. on Dr. William S. Thayer, Johns Hopkins University, Baltimore, Dr. Harvey Cushing, Moseley professor of surgery, Medical School of Harvard University, Boston, and Dr. Charles L. Dana, professor of clinical medicine, Cornell University Medical College.

Dr. Harry E. Mock, assistant professor of surgery in Northwestern Uni-

versity Medical School, was given a Sc.D. degree by Franklin College.

Dr. William B. Wherry, professor of bacteriology in the University of Cincinnati, will lead an expedition into Mexico to test the new treatment for typhoid.

Dr. David L. Edsall, dean Harvard Medical School, has been elected a member of the Board of Directors of the Rockefeller Foundation.

Dr. Hanan W. Loeb, for many years dean of the St. Louis University School of Medicine, died in July.

Dr. Herbert M. Evans, professor of anatomy, University of California, and Alfred N. Richards, professor of pharmacology, University of Pennsylvania, were recently elected to membership in the National Academy of Sciences.

Dr. Konrad E. Birghaug, assistant professor of bacteriology in the University of Rochester, has been elected a member of the Norwegian Pathological Society.

Dr. W. McKim Marriott, dean and professor of pediatrics of Washington University School of Medicine, has been elected temporary president of the Missouri Society for Crippled Children.

Dr. Charles F. Hoover, professor of medicine, Western Reserve University School of Medicine, died June 15.

Dr. C. C. Speidel, associate professor of anatomy, University of Virginia, was awarded the research prize, \$50, given by the Virginia Academy of Science for meritorious original research.

Dr. Frank Vinsonhaler has been appointed dean of the medical school of the University of Arkansas to succeed Dr. Morgan Smith.

Dr. Charles J. White has resigned as Edward Wiggelsworth professor of dermatology at the Harvard Medical School.

Dr. Fred C. Zapffe, Chicago, has been put in charge of all clinical clerks of Northwestern University Medical School. This is the first appointment of its kind in any medical school.

Dr. John A. Mandel, professor of chemistry, University and Bellevue Hospital Medical College, has been elected a member of the Deutsche Akademie der Naturforscher of Halle.

Dr. William H. Welch, of the Johns Hopkins University, has been elected honorary president of the American Social Hygiene Association to succeed the late Dr. C. W. Eliot.

Dr. Hamilton Hartridge has been appointed to the chair of physiology and Dr. W. E. Le Gros Clark to the chair of anatomy at the University of London, both tenable at St. Bartholomew's Hospital Medical College.

Dr. H. H. Woollard, assistant professor of anatomy and subdean of the faculty of medical sciences at University College, London, has been appointed to the chair of anatomy at the University of Adelaide, succeeding Professor Wood Jones.

Professor Lafayette B. Mendel, professor of physiological chemistry at Yale University, has been awarded the gold medal of the American Institute of Chemists.

Dr. Rudolph Matas, retiring professor of surgery at Tulane University, was made an Honorary Fellow of the Royal College of Surgeons in England on the occasion of the celebration of the Lister Centennial, April 5, 1927.

Dr. Alfred S. Warthin, professor of pathology, University of Michigan Medical School, has been appointed editor of the *Annals of Clinical Medicine*.

Dr. Eugene F. McCampbell, dean of the College of Medicine of Ohio State University since 1916, has resigned. He will engage in private practice.

Dr. Ludvig Hektoen has been elected a member of the Norwegian Pathological Society in Oslo.

Dr. William H. Welch, professor of the history of medicine, Johns Hopkins Medical School, and formerly director of the school of hygiene and public health, was awarded the 1927 medal for scientific research in medicine by the Association of American Physicians.

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Quebec, July 7.—"Visitors to Montreal need have no fear that they will contract typhoid fever, and the statements which are being made to the contrary in the United States are altogether wrong," declared Dr. Alphonse Lessard, director of the Provincial Hygiene Service, today. Dr. Lessard was shown despatches quoting Surgeon-General H. S. Cummings, of the United States, as saying that Montreal was "not a comparatively safe place for visitors."

"Cases of typhoid fever occurring now in the city of Montreal," Dr. Lessard said, "are only cases of contact, in other words, cases by contagion in families where primary cases happened previously."

"At the present time, no cases at all are traceable to water or milk. I consider that there is no danger to visitors and that warnings to prospective visitors to Montreal are entirely out of place."

The situation had been dealt with in a most excellent manner, Dr. Lessard continued. The evil had been rooted out, and for a long time there had been no primary cases, that is, cases of typhoid from actual drinking of infected water or milk. Contact cases were diminishing to a great extent every day, the health officer concluded.

—THE MONTREAL GAZETTE,  
July 8th, 1927.

## Abstracts of Current Literature

### MEDICAL PRACTICE AND MEDICAL CURRICULUM

We have reached a very important stage in the evolution of medical education. For many years the general trend of medical education has been along certain simple lines—namely, as knowledge in a department has advanced the policy followed has been increased instruction in the subject or subjects of that department with the result that the student of the present day finds it impossible to digest the mental food provided. As a remedy it has been suggested to lengthen the curriculum. It is conceivable that with the altered conditions as regards medical practice modifications in the curriculum might, in great part, get over the difficulty. This implies a correct forecast of the trend of general medical practice. Until this is determined it is impossible to decide how the curriculum should be altered to suit the requirements of the young graduate of today who is ultimately going to practice his profession as a general practitioner. The future of general medical practice lies more and more in the direction of pure medicine, and the general practitioner must be raised in pure medicine to a very high level. He, associated more intimately with the consulting physician, clinical pathologist, and officer of health, is the individual whose assistance will be of inestimable value in advancing medicine. On the general practitioner must we depend for the early recognition of disease—the field of medicine which at the present moment offers the most promising harvest. Hospital, laboratory and

office work has a tendency to produce a mentality too academic and bureaucratic. Cooperation between these different departments is becoming necessary to the teacher of clinical medicine and his students, for a number of diseases have been relegated to special hospitals which the medical student only occasionally visits, and in which, therefore, he has few opportunities for clinical study. The General Medical Council sees that radical alterations in the curriculum are necessary. But the conservatism of teachers generally, the vested interests of certain teaching bodies, and the jealousy of individuals regarding their particular subjects are barriers to innovations which are very difficult to overcome. In obstetrics the student should be trained to have a general conception of obstetric and gynecologic problems, and to be able to deal with ordinary deliveries. If he wishes to do more, he must have special postgraduate instruction and practical experience. The duration of this training need not be longer than three months, provided he gives up his whole time to the subjects of obstetrics and gynecology. There may be said to be two opposing camps—one which aims at an extended training and a very thorough experience in obstetrics, so that the young graduate may be able to undertake almost any operation in obstetrics; this is especially advocated in some of the schools of America. The other school views matters quite differently. Its policy is to train the undergraduate only to a moderate extent. This type of training pertains to such countries as France, Sweden and Denmark. These countries are aiming at an obstetric practice carried on by particularly educated and well trained midwives, assisted in cases of difficulty and supervised by specialists or specially trained accoucheurs distributed

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over the country. The great fault of the present system is that the student is not "steeped" sufficiently in clinical work; this clinical experience and training should be as thorough in the outdoor department as in the wards, because so many minor ailments and early phases of disease are only seen in the outdoor department. As a matter of fact, the old system of apprenticeship whereby the young candidate of medicine was associated with a practitioner and gained his clinical experience from actual practice was most useful, and nothing in the clinical training since that system was abolished has quite taken its place. Clinical training in medicine should be increased and possibly clinical training in surgery might be lessened. The clinical training of the undergraduate in medicine is not sufficient for present-day requirements. Further, ophtalmology certainly, and possibly some of the other medical specialties, should be given greater consideration. Surgery is on a very different footing.

No one today attempts to practice surgery seriously without some special postgraduate training. The great surgical principles, the possibilities of surgery, surgical pathology—these are the subjects to which the medical undergraduate's attention should be directed. The craft of surgery can only be learnt after graduation. The training of the undergraduate in surgery might with advantage be modified to suit the requirements of general practice of today. The same applies to the surgical specialties. We must not attempt to train experts in medicine, surgery and the specialties. With the foundation well laid in biology, chemistry, anatomy (modified), physiology and pathology, exactness in clinical observation is the first essential, and this can be developed to the fullest extent in

medical wards. Medicine, with the medical specialties, is the ultimate calling of the general practitioner.—KERR, J. M. MUNRO, *Brit. Med. Jour.*, May 14, 1927.

#### BOTANY IN THE PREMEDICAL COURSE IN SWITZERLAND

During the past year, reform of medical studies in Switzerland has been much discussed, more particularly at Zurich. Many maintain that the course is too long and to remedy this it is proposed to eliminate the requirement for the student to pass examinations in botany and comparative anatomy. The utility of this university instruction for future physicians is even doubted. For thirty years Professor Chodat has been examiner of candidates for the federal diploma of medicine and therefore has been able to observe a considerable number of students and to follow them in their careers. In all his botany courses, Chodat keeps physics and chemistry in the foreground and puts them aside only when they become insufficient to express the phenomenon of life. But botany, in addition, trains the student to think biologically. To be sure, the medical student will find all this in his lectures on physiology, normal anatomy and embryology; but in order to grasp these subjects he should be in contact for not less than one year with the professors of botany and zoology (comparative anatomy). Chodat thinks that a meeting of all the Swiss professors of natural sciences should be called to discuss a minimum program for the teaching of subjects necessary for medical students. This program should be revised every five years. For thirty years Chodat has constantly revised his teaching to keep abreast of medical knowledge. Today medicine, like sociology, is showing renewed attention to heredity. It is easier to experiment on sweet peas,

string bears and guinea-pigs than on the human being; hence the capital importance of botany and zoology in the study of heredity and sociology.—*Jour. Amer. Med. Assn.*, May 21, 1927.

#### GRADUATE TRAINING IN INTERNAL MEDICINE

The Mayo Foundation conducts an organized medical course as part of the graduate course in medicine offered by the Graduate School of the University of Minnesota. This course was worked out on the modified apprentice plan. The applicant works with his chief in clinical or research work. On the average, two necropsies a day are handled. Many of the men devote considerable time to special research problems. A routine course on diagnostic work takes in about 45 cases a day, many of them being complicated. Many lectures are given on special subjects, such as cardiac disease or nephritis, for those who wish to attack special problems. After a course of three or four years, the applicant presents himself for a degree. At this time he is considered competent to make a diagnosis or give an opinion in a difficult case, which he must be able to discuss intelligently. Two hundred and fifteen men from 48 American and 11 foreign universities have taken this course, the average age of the student being 26 years. Two hundred and seven had had internships or residence in hospital; 57 had had full time laboratory service; 49 were in practice with other physicians; 43 in general practice by themselves; 19 of the students were women. Of the total number, 109 left after one year; only 2 were dropped because of inefficient work; 105 did 6 months extra work in some laboratory field; 28 submitted theses for a degree from the university. One hundred and

twenty-five men are engaged as follows: 13 in general practice; 26 in consultant practice; 81 in group consultant practice; 5 in full time, and 50 in part time teaching positions.—*WILSON, LOUIS B., Assoc. Amer. Physicians*, May 14, 1927.

#### UNDERGRADUATE INSTRUCTION IN ROENTGENOLOGY

Medical colleges must, and will soon, be forced by circumstances to pay more and more attention to the instruction of the undergraduate in roentgenology. The following method of instruction is now in force at the Emory University Medical Department: The students are taken as Juniors, as it is at this time they begin work on the out-patient clinic and on the wards. They receive a weekly lecture during the entire year, which is designed to cover comprehensively the subject of roentgen ray. This starts with the development of roentgen-ray apparatus, including the use of electrical currents, transformers, rheostats, etc. Opportunity is afforded of examining the different apparatus in this department. The lectures progress weekly, covering the entire body, its different tracts, and the more frequent and more easily diagnosed lesions. This class is divided into four sections. Each section has an hour a week in the clinical laboratory, where interpretation of the films is taught. This scheme of operation permits each Junior student to receive approximately 30 hours of lectures covering the subject of roentgen ray, and also 20 hours of clinical review of the films. In the Senior year the students, in groups of five to seven, receive 5 hours clinical instruction during which time the cases they are working up are reviewed from the roentgen-ray standpoint.—*CLARK, J. J., Radiology*, May, 1927.



### POSTGRADUATE MEDICAL INSTRUCTION IN BELGIUM

Various attempts to organize postgraduate medical instruction have been made in many countries. The plan usually is to provide the courses during the academic vacations, with the idea of furnishing general practitioners with a survey of recent progress in medicine in a more practical and more tangible manner than through textbooks or the medical press. It was on that principle that the so-called *journées médicales* in Brussels were organized. These sessions have become the national medical convention of Belgium and have acquired a measure of international fame. In a more restricted sense, the various medical schools organize courses with clinical demonstrations and practical exercises, such as are calculated to benefit the specialist. In the near future, the Faculty of Medicine of Brussels plans to give a course of theoretical and practical lectures on mental medicine, medicolegal psychiatry and abnormal children, in connection with visits at various institutions, hostels and prisons. The Faculty of Medicine of Liège had likewise undertaken the organization of postgraduate courses, which were also given during vacations. But those were isolated efforts, which did not result in any continuity or regular organization.

However, a movement that was organized during the war has been taken up again; namely, that of the medical graduates of the University of Louvain. A short course was organized in December of last year, during which the leading professors gave lectures on the principal problems interesting medical practitioners. Following that short session, the members present voted to reestablish the medical alumni association of the University of Louvain. The association has a double

purpose: it affords the alumni a chance to get together occasionally and renew old acquaintances, and it offers all an opportunity to become rapidly informed in regard to the principal questions being discussed in the fields of medicine and science. The association has decided to hold two meetings each year, one in summer and one in winter. In the intervals, connections are kept up by the medical review of Louvain, which reflects the instruction in the Faculty of Medicine. In order to make this national organization effective and to attract the largest number of physicians, the organizing committee, in addition to the organizers proper, include two delegates from each province. This will insure a connection with the physicians residing in the more remote centers.—*Jour. Amer. Med. Assn.*, May 21, 1927.

### UNIVERSITY DISTURBANCES IN BUENOS AIRES

Chronic unsettled conditions have prevailed in the universities of this country since the students were allowed to participate in the election of school officers. New acute crises have recently developed in the Buenos Aires and Rosario medical schools. In the Buenos Aires school, a new dean had to be elected by a vote of an equal number of professors, assistant professors and students' delegates. As the professors always divide their votes among two or more candidates and many abstain from voting as a silent protest against the present system, the result is that the student faction, voting as a unit, always decides the issue. In the recent election Drs. Arce and Lanari were the candidates for the deanship. The campaign was violent, and personal attacks through posters, pamphlets and even improvised journals became the rule. At the election of the students' delegates, a



climax was reached, as all kinds of promises were made, voters were brought in automobiles and charges of electoral frauds were made on both sides. Dr. Lanari secured a slight majority in the students' preference vote. On election day at the medical school, the acting dean, Dr. P. Belou, closed the doors to everybody, including professors, pending a decision by the University superior board as to whether the school directing board should also be reelected. The superior board decided the present school authorities should continue to serve until September. The postponement of the elections and the continuance of the school board were taken by the students as evidence of a tendency to frustrate the appointment of their candidate. They therefore forced their way into the school and compelled the acting dean, Dr. Belou, to resign; but the resignation was recalled by Dr. Belou the next day, he claiming that it had been signed under duress. Dr. Romano, the oldest counselor, then became acting dean, against the protest of almost the whole directing board. At this juncture, the superior board ordered Dr. R. Rojas, the rector of the university, to take charge of the management of the school and also of the election. When this was held, eighty-four professors refrained from voting; fifty-nine students' delegates and forty-four professors cast their votes, electing almost unanimously Dr. Lanari, a former dean and a much respected professor. Dr. Arce had withdrawn a few days previously.

As Rosario, a new dean was also elected. Dr. R. Araya, to whom the school owes a great deal, was unable to secure the necessary two-thirds of the votes for reelection. Dr. J. A. Gatti was elected dean, and not being the students' candidate his resignation was demanded.

He refused, but had to agree to grant a certain voice to the students in the school management.—*Jour. Am. Med. Assn.*, May 28, 1927.

#### MEDICAL EDUCATION IN DENMARK

All Danish physicians receive the same university education at the one national medical school, the University of Copenhagen, at which instruction is practically gratuitous, the fee for the entire course amounting to less than \$30. After a preliminary education corresponding to graduation from a high school in the United States, seven years of university education are required. The curriculum compares favorably with that in a Class A medical school of this country. There are about 900 medical students, and each year from 70 to 100 graduate. There is about one physician for each 1,600 inhabitants in the country. It was of much interest to learn that quackery has been forbidden since 1672 and that there are practically no unqualified physicians in the country. In addition to the university education, the candidate must attend a course in obstetrics at the State lying-in hospital in order to get a full license, and most physicians continue their training for one or more years in a hospital. All who aspire to be specialists must take several additional years of training under rules laid down by the Danish Medical Association, which organization publishes each year a list of approved specialists. A small minority of Danish physicians qualify themselves as "university doctors," which gives a right to lecture at the university. Since 1914, special training has been required as a prerequisite for appointment as a medical officer of health. This consists of a four months' course in hygiene, vital

statistics, forensic medicine, psychiatry, bacteriology, epidemiology, venereology, and sanitary law. Before being admitted to this course the applicant must have passed all medical examinations, must have served one month in a maternity hospital, six months in a medical and six months in a surgical hospital department, three months in an epidemic hospital, three months in a psychiatric hospital or asylum, and three months as a practitioner in the country or in a small town. In brief, the requirements for qualification of a medical officer of health consists of twenty-six months' theoretical and practical training in addition to being a medical graduate. The uniformly high standard of medical education in Denmark for all physicians has insured a good quality of medical service, and as a result, the physicians are held in high esteem by the people. The economic and social condition of the doctors on the whole seemed to be comparatively better in Denmark than in the United States. Only 20 per cent of the medical service is classified as "private practice," the remainder being by contract with the sick benefit clubs and through employment by the local and state governments.—THOS. PARRAN, JR., *Public Health Reports*, May 27, 1927.

#### APPLYING MOTION PICTURES TO MEDICAL EDUCATION

I propose that Mr. George Eastman be allowed the honor of establishing a "Medical Film Foundation, Inc." This proposed institution shall be endowed by Mr. Eastman with sufficient material and personnel to produce medical films. It shall, moreover, make films based on accepted and recognized medical books. The selection of suitable books shall be arrived at by polling the entire medical

public or in response to a sufficient number of written suggestions. This is essentially similar to the system used in Carnegie libraries. If there is a sufficient number of inquiries for a book, it is purchased. The "Medical Film Foundation" shall furnish to any recognized medical school, medical society or responsible group of medical men any of its films upon payment of a rental fee and transportation charges. The "Medical Film Foundation" shall furnish to any responsible group of laymen such medical pictures as are intended for lay use. The medical films made shall be directed by the author of the medical book being filmed or by some properly qualified doctor of medicine delegated by such author. The technical features of medical motion picture production shall be in charge of the technical staff of the "Medical Film Foundation."—MONTAGUE, J. F.: *Iowa State Med. Soc. Journal*, June, 1927.

#### IMPORTANCE OF HUMAN BIOLOGY

The scientific, as well as practical, significance of human experimental physiology is now far more widely recognized than it was a few years ago; but I think that a good deal remains to be done in the way of getting rid of both practical and theoretical teaching based on the mechanistic idea of life. It is not merely because of its irrelevancy to practical medicine, but because of its scientific defects, that this teaching seems to me very unsatisfactory. From the study of an isolated organ or tissue we can learn only a little about how the organ or tissue behaves under normally occurring conditions. This is because we have violently altered beyond normal limits the conditions of environment which Nature maintains in the intact organism, and have

thus made the responses of the organ or tissue abnormal, so that we do not discover how it behaves in the intact organism. Even an anesthetized, though otherwise intact, animal is not in a normal state. We are thus apt to miss knowledge which we should gain at once from experiments on an intact or nearly intact organism. The search for imaginary "mechanisms" diverts us from the search for what can be found. From the behavior of an isolated perfused kidney or lung we gain little or no knowledge of the amazing delicacy with which the kidneys and lungs in an intact man or animal regulate the composition of the internal body fluids. Attention is, in fact, directed away from this regulation, whereas when the living body is intact experiments which are easily carried out on man reveal the regulation in the most striking manner. Regulation or coordination means nothing fundamental for the mechanistic physiology, and thus receives very little attention, or is twisted round so as to be made to appear as if it were nothing but a sort of mechanical balance, dependent on innate peculiarities of structure or composition. It is common, for instance, to speak of the regulation of reaction in the living body as if this were an equilibrium of acid and base, maintained approximately steady by the presence in the body of buffering substances, instead of by physiologic activity. Language of this sort is imagined to be scientific: it seems to me only evidence of lack of scientific insight. A similar remark applies to such expressions as the "mechanism" of heredity, or of secretion or respiration. In actual fact the structure is bound up with regulation, so that co-ordinated or regulated activity is a primary feature in life. In other words, the functional significance of biologic structure and activity is of its very essence.

The application of the word "mechanism" to life amounts to the assertion that this is not true. Not only practical medicine, but also biology itself as a science, is dealing with the essentially and specifically co-ordinated structure and activity which we call life. In laying no primary stress on the coordination or regulation the mechanistic physiology has not only tended to divorce itself from practical medicine in the manner we are all painfully aware of, but is radically unsound in a scientific sense. It is life as an essentially co-ordinated whole that physiology, no less than practical medicine, has to keep in view. Practical teaching which consists mainly in experiments on isolated fragments of frogs or other animals, and in isolated chemical experiments on substances occurring in the body, is no satisfactory instruction in physiology as a science.—HALDANE, J. S., *Brit. Med. Jour.*, May 21, 1927.

## New Books

THE LIFE AND WORKS OF SIR PATRICK MANSON. By Philip H. Manson-Bahr, D.S.O., M.D., F.R.C.P., and A. Alcock, C.I.E., LL.D. Aberd., F.R.S., Lieut.-Colonel I.M.S. (retired), Sometime Professor of Medical Zoology in the University of London School of Tropical Medicine. With 12 half-tone plates. William Wood and Company, New York, 1927. Price, \$5.50.

LISTER, AS I KNEW HIM. By John Rudd Lieson, M.D., C.M. Edin., M.R.C.S., J. P. Middx., F.L.S., F.R.A.S., Senior Consulting Physician St. John's Hospital, Twickenham. Late Demonstrator of Anatomy, St. Thomas's Hospital. William Wood and Company, New York, 1927. Price, \$3.50.

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